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APPENDIX I

PERMISSION LETTER FOR DATA COLLECTION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION
FACULTY OF EDUCATION AND PSYCHOLOGY
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA

04.01.2019

TO WHOMSOEVER IT MAY CONCERN

Ms. Shreelakshmi. S is a UGC- Junior Research Fellow pursuing Ph. D in Education from the Department of Education (CASE), Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat under the guidance of
Prof. K. Pushpanadham. The study is titled 'A Study on the Curriculum Management of International Baccalaureate Primary Years Programme in India'.

As a part of the research, school visits are essential to gain better understanding on the International Baccalaureate PYP school context and practices. The data collected in any form shall be kept confidential and shall be used only for the research purpose. It would be helpful if you extend your full cooperation to her.

Signature
Prof. K. Pushpanadham
(Guide)

APPENDIX II

DATA COLLECTION TIMELINE

Schools	Timeline
School A	July- August 2018
School B	November- December 2018
School C	January- February 2019

Location of Schools in India

APPENDIX III

LIST OF EXPERTS FOR RESEARCH TOOL VALIDATION

Sl.No	Name	Designation
1.	Prof Karanam Pushpanadham	Head, Department of Educational Administration, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat
2.	Prof V D Bhat	Former Professor, Regional Institute of Education, Mysore, Karnataka
3.	Prof S C Panigrahi	Former Professor, Department of Education, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat
4.	Prof M U Paily	Former Professor, Regional Institute of Education, Mysore, Karnataka
5.	Theophane D'Souza	Principal, Navarachana International School, Vadodara, Gujarat

APPENDIX IV

CURRICULUM MANAGEMENT TEACHERS' PERCEPTION SCALE

This questionnaire is developed by the researcher to gain better understanding on the curriculum management process in the IBPYP from teachers' perspective. The questionnaire is divided into two sections.

Section A: ***Teacher's Profile***

Section B: ***Teacher's perception on Curriculum Management***. Further the second section is divided into four parts.

- Part 1: ***Curriculum development in PYP***. The statements are related to philosophy, structure of PYP, roles in the development of POI and steps undertaken in development of POI.
- Part 2: ***Curriculum implementation in PYP.*** The statements are related to teacher's role, students' engagement, pedagogical practices and classroom environment.
- Part 3: ***Curriculum evaluation in the PYP.*** The statements are related to the criteria and methods adopted for curriculum evaluation process.
- Part 4: ***Pedagogical leadership of Principals***. The statements are related to the behavior and roles of the principal as a pedagogic leader.

The items need to be rated on a scale ranging from Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD). Kindly indicate your option about each of the statements by a tick mark (√).

SECTION A: TEACHER PROFILE

Current Teaching Assignment

Nursery	Pre-Jr	Pre-Sr	G-1	G-2	G-3	G-4	G-5	G-6	G-7	Teach-Support Staff	Art Music Dance
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

1. Gender:

Male ☐ Female ☐

2. Age Group:

20- 29 ☐ 30- 39 ☐ 40- 49 ☐ 50+ ☐

3. Highest Academic Qualification

Bachelor's degree	B. A ☐	B. Sc ☐	B. Com ☐	B. Tech/ B. E ☐	Others (specify) ☐
Post Graduate Diploma or Certificate					
Master's degree	M.A ☐	M. Sc ☐	M. Com ☐	M. Tech/ M. E ☐	Others (specify) ☐
Professional Qualification	B. Ed ☐	M. Ed ☐	BP. Ed ☐	PTC ☐	Others (specify) ☐
Doctorate degree (specify subject)					

4. Teaching Experience (overall):

0- 3 years	4- 7 years	8- 12 years	> 12 years
☐	☐	☐	☐

5. Teaching Experience (IB PYP):

1- 3 years	4- 7 years	8- 12 years	> 12 years
☐	☐	☐	☐

6. Level of IB Professional Training Name

Level of IB Professional Training	**Year**
Category 1	
Category 2	
Category 3	
Not trained	

7. International Academic Exposure through conference/workshop/seminars/field trips/virtual platforms

Name of the event	**Organizing body**	**Location**	**Year**

8. IB University Courses or Certificates

a) None ☐

b) IB Certificate in Teaching and Learning ☐

c) IB Advanced Certificate in Teaching and Learning ☐

d) Other (please specify) ☐

9. Competence in the usage of ICT

a) Basic: Basic use, undeveloped, technological dependent ☐

b) Focused: Used to address a need or single events, traditional usage ☐

c) Creative: Honing ICT use, productivity, creativity and sharing success story ☐

SECTION B: TEACHER'S PERSPECTIVE ON CURRICULUM MANAGEMENT IN IB PYP

PART 1: CURRICULUM DEVELOPMENT

Sl. No	Statements	SA	A	N	D	SD
1	PYP curriculum makes the students inquiring within school and beyond the school	☐	☐	☐	☐	☐
2	PYP provides opportunity to develop the spiritual dimension of students	☐	☐	☐	☐	☐
3	PYP curriculum is developed keeping the learner profile at the focus	☐	☐	☐	☐	☐
4	PYP has less scope for contextualising the curriculum based on the local needs	☐	☐	☐	☐	☐
5	Technology literacy/digital literacy needs to have a place in the Learner Profile	☐	☐	☐	☐	☐
6	Subject knowledge and skills alone are necessary in the present labour market	☐	☐	☐	☐	☐
7	PYP curriculum is rich in terms of its approach compared to the national curriculum for primary education	☐	☐	☐	☐	☐
8	The national curriculum has wide range of topics to be taught at the primary level compared to PYP	☐	☐	☐	☐	☐
9	PYP curriculum is overloading for parents	☐	☐	☐	☐	☐
10	PYP curriculum allows easy transition from IB board to other National School board.	☐	☐	☐	☐	☐
11	POI is reviewed before the development of new POI	☐	☐	☐	☐	☐
12	Learner profile attributes developed in primary years are barely sustained throughout the schooling in IB	☐	☐	☐	☐	☐
13	Parents expectations and demands are considered while developing the POI	☐	☐	☐	☐	☐
14	The topics in POI has global significance for all students in all culture	☐	☐	☐	☐	☐
15	The syllabus of the POI is aligned with the NCERT syllabus	☐	☐	☐	☐	☐
16	POI provides opportunity to develop psychomotor and affective dimensions of students	☐	☐	☐	☐	☐

17	POI has scope for developing higher order thinking skills	☐	☐	☐	☐	☐
18	Multiple learning experiences are planned to gives multiple perspectives on the topic/ concept through POI	☐	☐	☐	☐	☐
19	Resources are mobilized effectively for the implementation of POI. (This includes classroom arrangement, learning materials, laboratories etc)	☐	☐	☐	☐	☐
20	Teachers are oriented on the POI before it's implementation	☐	☐	☐	☐	☐
21	Learning materials are developed by the school to transact POI	☐	☐	☐	☐	☐
22	Parents are given orientation regarding the POI and their role in student's learning	☐	☐	☐	☐	☐
23	Development of POI is a collaborative task	☐	☐	☐	☐	☐
24	Teachers are encouraged to contribute for the development of POI through the exchange of thoughts, speech, writing, and behaviour	☐	☐	☐	☐	☐
25	The school revises the POI regularly	☐	☐	☐	☐	☐

PART 2: CURRICULUM IMPLEMENTATION

Sl. No.	Statements	SA	A	N	D	SD
1	I adopt pedagogical approaches which caters to the need of all the students	☐	☐	☐	☐	☐
2	I support students to learn actively both inside and outside the classroom	☐	☐	☐	☐	☐
3	I believe each child is unique and has an ability to inquire into the world	☐	☐	☐	☐	☐
4	Students questioning is a disturbance to the class	☐	☐	☐	☐	☐
5	I solve all the problems of students in the classroom	☐	☐	☐	☐	☐
6	I provide platform for students to share their ideas	☐	☐	☐	☐	☐
7	I adopt inquiry based teaching as it is mandatory for the IB PYP teachers	☐	☐	☐	☐	☐
8	I facilitate students to participate actively in their own learning	☐	☐	☐	☐	☐
9	I address the human commonality and diversity through transdisciplinary themes	☐	☐	☐	☐	☐
10	Transdisciplinary approach for teaching and learning is not relevant for primary level	☐	☐	☐	☐	☐
11	Transdisciplinary approach for teaching and learning is not user friendly for teachers	☐	☐	☐	☐	☐
12	Transdisciplinary approach doesn't have greater scope for the development of strong subject base	☐	☐	☐	☐	☐
13	I give time and space for student reflection in classroom	☐	☐	☐	☐	☐

14	I gather evidences of the development of learner profile attribute among students	☐	☐	☐	☐	☐
15	I use ICT to provide personalised, creative and independent learning experiences for students	☐	☐	☐	☐	☐
16	I use ICT to share my ideas and practices with other teachers	☐	☐	☐	☐	☐
17	I don't prefer ICT during teaching learning	☐	☐	☐	☐	☐
18	I reflect on my own teaching after each session and plan accordingly for the next session	☐	☐	☐	☐	☐

19. What are the challenges enacted during the implementation of PYP curriculum?

20. What are the major barriers in implementing PYP curriculum?

Challenges	**Tick mark**
Complexity of PYP Curriculum	☐
Lack of experience	☐
Lack of resources	☐
Lack of time	☐
Lack of support from school authorities	☐
Too much information	☐
Classroom management	☐
Planning teaching methods	☐
Workload	☐
New school	☐
Multicultural classroom	☐
Students with special needs	☐
Teaching different levels	☐
Parental expectations from teachers	☐
Lack of cooperation from parents	☐

Kindly rate the below items based on the frequency of the usage on 5- point scale i.e. Never(N), Rarely(R), Sometimes(S), Often(O), Always(A)

		N	**R**	**S**	**O**	**A**
1	**How often do you use these pedagogical approaches**					
	Chalk and talk method	☐	☐	☐	☐	☐
	Individualized Instruction method	☐	☐	☐	☐	☐
	Demonstration method	☐	☐	☐	☐	☐
	Collaborative and Cooperative method	☐	☐	☐	☐	☐

	Activity based method	☐ ☐ ☐ ☐ ☐
	Play method	☐ ☐ ☐ ☐ ☐
	Inquiry method	☐ ☐ ☐ ☐ ☐
	Flipped classroom method	☐ ☐ ☐ ☐ ☐
2	**How often do you use these assessment techniques and tools**	
	Assessment techniques	
	Performance assessment (oral presentation, debate, role play, Viva voce)	☐ ☐ ☐ ☐ ☐
	Process focusses assessments (how student is learning is recorded through observation, checklist)	☐ ☐ ☐ ☐ ☐
	Selected responses (paper pen test)	☐ ☐ ☐ ☐ ☐
	Open ended tasks	☐ ☐ ☐ ☐ ☐
	Portfolios	☐ ☐ ☐ ☐ ☐
	Self-assessment	☐ ☐ ☐ ☐ ☐
	Peer assessment	☐ ☐ ☐ ☐ ☐
	Assessment tools	
	Exemplars	☐ ☐ ☐ ☐ ☐
	Checklists	☐ ☐ ☐ ☐ ☐
	Anecdotal records	☐ ☐ ☐ ☐ ☐
	Rubrics	☐ ☐ ☐ ☐ ☐
3	**How often do you address these Learner profile attributes in classroom**	
	Inquirers	☐ ☐ ☐ ☐ ☐
	Knowledgeable	☐ ☐ ☐ ☐ ☐
	Thinkers	☐ ☐ ☐ ☐ ☐
	Communicators	☐ ☐ ☐ ☐ ☐
	Principled	☐ ☐ ☐ ☐ ☐
	Open-minded	☐ ☐ ☐ ☐ ☐
	Caring	☐ ☐ ☐ ☐ ☐
	Risk-takers	☐ ☐ ☐ ☐ ☐
	Balanced	☐ ☐ ☐ ☐ ☐
	Reflective	☐ ☐ ☐ ☐ ☐

SECTION 3: CURRICULUM EVALUATION

Sl. No.	Statements	SA	A	N	D	SD
1	The evaluation of Curriculum is mandatory during the self-study process	☐	☐	☐	☐	☐
2	Case studies/ rich description of the POI development process is collected during the self-study process	☐	☐	☐	☐	☐
3	Classroom observations are made by the internal teachers/ principal during the self-study process	☐	☐	☐	☐	☐
4	All the teaching staff are involved in the self-study process	☐	☐	☐	☐	☐
5	Students are involved in the self-study process	☐	☐	☐	☐	☐
6	Parents are involved in the self-study process	☐	☐	☐	☐	☐
7	Curriculum evaluation (a part of self-study) is merely a paper work in the school	☐	☐	☐	☐	☐
8	Curriculum evaluation is a burden for teachers due to huge paper work and documentation	☐	☐	☐	☐	☐
9	Self Study helps teachers in improving their performance	☐	☐	☐	☐	☐
10	Curriculum evaluation is conducted only to retain the recognition from the IBO	☐	☐	☐	☐	☐

SECTION 4: PEDAGOGICAL LEADERSHIP OF PRINCIPAL

Sl. No	Statements	SA	A	N	D	SD
1	The principal and teachers reciprocate mutual trust and respect.	☐	☐	☐	☐	☐
2	Collaborative reflective planning is in place to ensure the alignment of curriculum with the vision and mission of IB PYP	☐	☐	☐	☐	☐
3	The principal clearly conveys the pedagogical approach that is emphasized by the IB PYP to the teachers	☐	☐	☐	☐	☐
4	The principal doesn't consider the suggestions made by teachers	☐	☐	☐	☐	☐
5	The principal encourages all teachers to participate in improving students' academic achievements and learner profile attributes	☐	☐	☐	☐	☐
6	Principal instructs the teachers what to teach and how to teach	☐	☐	☐	☐	☐

7	Works with teachers on pedagogical issues for improvement.	☐	☐	☐	☐	☐
8	The principal directs teachers by setting goals that both agree on	☐	☐	☐	☐	☐
9	The principal encourage autonomy of teachers in decision making regarding the pedagogical approaches adopted and learning resources used in the classroom	☐	☐	☐	☐	☐
10	The principal allows the teachers to define their own roles and responsibility	☐	☐	☐	☐	☐
11	The principal doesn't interfere in pedagogical practices of teachers in the school	☐	☐	☐	☐	☐
12	The principal rarely considers teachers' expertise in teaching in decision making on pedagogical issues	☐	☐	☐	☐	☐
13	The principal gives leadership position to teachers and provides sufficient resources and time to make meaningful contributions to students learning	☐	☐	☐	☐	☐
14	The principal along with teachers share accountability for students' academic performance	☐	☐	☐	☐	☐
15	Protects teachers' classroom time from external disruptions.	☐	☐	☐	☐	☐
16	Shelters teachers from disruptive politics.	☐	☐	☐	☐	☐
17	The principal provides platform for collaborative learning of teachers within the school and outside the school	☐	☐	☐	☐	☐
18	The principal arranges professional development programs for newly recruited teachers	☐	☐	☐	☐	☐
19	The principal identifies the strengths of teachers and inspires them to raise to higher levels	☐	☐	☐	☐	☐
20	Diligent reader of professional literature.	☐	☐	☐	☐	☐
21	Knowledgeable on effective PYP practices	☐	☐	☐	☐	☐
22	Actively involved in curriculum development, implementation and evaluation	☐	☐	☐	☐	☐
23	The principal makes regular classroom observation and provides feedback to teachers	☐	☐	☐	☐	☐
24	Recognizes teachers accomplishments for student improvement	☐	☐	☐	☐	☐
25	The principal is in constant communication with all the stakeholders	☐	☐	☐	☐	☐

26	Teachers and students listen to the ideas/concerns of the principal because of his/her skills, knowledge and personality	☐	☐	☐	☐	☐
27	The principal dedicates more than 60% time on improving students learning	☐	☐	☐	☐	☐
28	The principal dedicates more than 50% time on administration and paper work	☐	☐	☐	☐	☐
29	The principal extends his/ her services to the larger community	☐	☐	☐	☐	☐
30	The principal encourages community participation in the school activities and vice versa	☐	☐	☐	☐	☐

APPENDIX V

STUDENT SURVEY

Dear students, this is not a test, your responses will not be graded. The following statements are related to your experience in the IB school, for which your views are invited. These statements are put under a 3- point scale, I agree a lot, I agree a little and I disagree.

Please read each item and give your response by putting a tick mark (√) against the appropriate level of agreement.

Your responses are very important for the research work on *Curriculum Management in International Baccalaureate Schools in India.*

Gender: Date:

Grade: Name:

Sl No	Items	I agree a lot	I agree a little	I disagree
1	**How much do you agree with these statements about your school?**			
	I enjoy being a student in the school	☐	☐	☐
	I get international exposure in my school	☐	☐	☐
	I get technology resources to learn in my school	☐	☐	☐
	My school encourages academics, sports, music, drawing, arts and dance equally	☐	☐	☐
	I feel safe in the school	☐	☐	☐
2	**How much do you agree with these statements about yourself as a student?**			
	I am successful as a student.	☐	☐	☐
	I am successful because of my hard work	☐	☐	☐
	I am always trying to improve my learning	☐	☐	☐
	I feel confident in the school	☐	☐	☐
	I am good at using technology for learning	☐	☐	☐

Sl No	Items	I agree a lot	I agree a little	I disagree
3	**How much do you agree with these statements about your teachers?**			
	My teachers encourage me to ask questions.	☐	☐	☐
	I understand the lessons taught by teachers	☐	☐	☐
	I am afraid of my teachers	☐	☐	☐
	My teachers praise me for good work	☐	☐	☐
	My teachers give personal care and attention	☐	☐	☐
4	**How much do you agree with these statements about learning mathematics?**			
	I usually do well in mathematics	☐	☐	☐
	I enjoy learning mathematics	☐	☐	☐
	I am not good at mathematics	☐	☐	☐
	I would like to do better in mathematics	☐	☐	☐
	Mathematics is harder for me than for my classmates.	☐	☐	☐
5	**How much do you agree with these statements about learning English?**			
	I usually do well in English	☐	☐	☐
	I enjoy learning English	☐	☐	☐
	I am not good at English	☐	☐	☐
	I would like to do better in English	☐	☐	☐
	English is harder for me than for my classmates	☐	☐	☐
6	**How much do you agree with these statements about learning science?**			
	I usually do well in science.	☐	☐	☐
	I enjoy learning science	☐	☐	☐
	I am not good at science	☐	☐	☐
	I would like to do better in science	☐	☐	☐
	Science is harder for me than for my classmates	☐	☐	☐

Sl No	Items	I agree a lot	I agree a little	I disagree
7	**How much do you agree with these behaviour/activities in classroom?**			
	I listen to the teacher talk always	☐	☐	☐
	I am active in the classroom	☐	☐	☐
	I ask questions in the classroom	☐	☐	☐
	I work with my classmates or friends on a project or a problem	☐	☐	☐
	I work alone on a project/ to solve a problem	☐	☐	☐
8	**How much do you agree with these statements about your behavior?**			
	I ask questions to learn and know more	☐	☐	☐
	I know a lot about different things around	☐	☐	☐
	I use my mind to consider ideas for making judgment	☐	☐	☐
	I can express myself in many ways	☐	☐	☐
	I understand the difference between right and wrong	☐	☐	☐
	I am willing to listen and consider everyone's point of view	☐	☐	☐
	I am kind and care for others	☐	☐	☐
	I try to do new things even if it is difficult	☐	☐	☐
	I have many interests. I work and play hard	☐	☐	☐
	I think deeply about my learning, others and myself	☐	☐	☐

APPENDIX VI

CLASSROOM OBSERVATION SCHEDULE

The Classroom Observation Schedule has been developed by the researcher to gain deeper understandings on the Curriculum Implementation in the PYP schools. The curriculum implementation can be observed through four indicators, they are- ***Teacher's role as a facilitator, Taught Curriculum, Students behavior*** and ***Classroom Environment.*** The observation will be based on the statements given in the schedule. The schedule is rated on a 4-point scale viz. Excellent(E), Good(G), Satisfactory(S) and Needs Improvement(NI) along with this a checklist is merged in the schedule.

Name of the school
School location
Date of observation
Grade
Gender
Teaching experience in IB
Level of IB Professional training

Description of the classroom setting

1. How many students are in the classroom at the time of the observation?

   1-5 6-10 11-15 16-20 21-24 25+

2. Were other school staff working in the classroom? Yes/ No

   If yes, what was their role or function?

3. Were there Children with Special Needs?

   If yes, mention the type of disability

A	TEACHER'S ROLE AS A FACILITATOR	Level of performance			
1	**Lesson introduction**	**E**	**G**	**S**	**NI**
	Flexibility in adapting to the readiness of the students	☐	☐	☐	☐
	Effective method adopted to engage pupil (inquiry, situational, questioning, problem based, experimenting, activity, narration etc.)	☐	☐	☐	☐
	Linkage with previous knowledge	☐	☐	☐	☐
	Focus on the central idea	☐	☐	☐	☐
2	**Development of the lesson**				
	Appropriate teacher initiated questions	☐	☐	☐	☐
	Adequacy and appropriateness of learning activities	☐	☐	☐	☐

	Opportunities for students to inquire and explore	☐	☐	☐	☐
	Encourage student initiated questioning and inquiry	☐	☐	☐	☐
	Effective scaffolding	☐	☐	☐	☐
	Assignment of individual and group tasks	☐	☐	☐	☐
	Redirecting students thinking	☐	☐	☐	☐
	Consolidation of students' view points	☐	☐	☐	☐
	Effectiveness of concept attainment	☐	☐	☐	☐
	Development of skills (as mentioned by IB)	☐	☐	☐	☐
	Opportunities to explore the commonalities of human experience	☐	☐	☐	☐
	Opportunities to demonstrate and develop learner profile attributes	☐	☐	☐	☐
	Opportunities to develop higher order thinking	☐	☐	☐	☐
	Opportunities to take action as a result of learning	☐	☐	☐	☐
	Opportunities for students to apply the learning into their immediate environment	☐	☐	☐	☐
	Creativeness in extending the learning into new situation	☐	☐	☐	☐
	Integration of ICT during inquiry teaching and learning (techno pedagogy)	☐	☐	☐	☐
3	**Assessment, Review, Assignment**				
	Effective closure of lesson	☐	☐	☐	☐
	Attainment of objectives	☐	☐	☐	☐
	Opportunities to reflect on learning	☐	☐	☐	☐
	Effective assessment techniques	☐	☐	☐	☐
	Use of ICT for assessment	☐	☐	☐	☐
	Relevant assignments (interesting and application oriented)	☐	☐	☐	☐
4	**Reflection and feedback**				
	Getting students feedback on the lesson	☐	☐	☐	☐
	Record student learning outcomes on demonstration of LP attributes	☐	☐	☐	☐
	Self reflection of teachers on pedagogical practices	☐	☐	☐	☐
	Reflection on achievement of objectives	☐	☐	☐	☐
	Peer reflection with other teachers	☐	☐	☐	☐
	Discussion with parents on students learning	☐	☐	☐	☐
	Using the feedback and reflection for next lesson	☐	☐	☐	☐

B	**TAUGHT CURRICULUM**	**Level of Transaction**			
		E	**G**	**S**	**NI**

Content with global significance/ suited to all students with different cultures	☐	☐	☐	☐
Contextualizing the content to the level and background of students	☐	☐	☐	☐
Use of appropriate examples/ non examples	☐	☐	☐	☐
Present multiple perspectives on topic	☐	☐	☐	☐
Establish linkage between, among and across different concept	☐	☐	☐	☐
Establish linkage to the central idea of transdisciplinary theme	☐	☐	☐	☐
Effective clarification of misconceptions	☐	☐	☐	☐
Effective integration of concepts across the traditional subjects	☐	☐	☐	☐
Learning resources				
Appropriate use of ICT	☐	☐	☐	☐
Use of locally available resources	☐	☐	☐	☐

C	**STUDENTS BEHAVIOR (Tick against the student behaviour observed)**	**Tick**
	Listening to teacher	☐
	Responding to teachers question	☐
	Asking for clarification/ evidence/doubt/question without fear	☐
	Show interest in learning	☐
	Seeking for information	☐
	Share ideas with others	☐
	Responding to student ideas	☐
	Argument with other students	☐
	Share experience/idea on human commonality	☐
	Share experience/ idea on diversity	☐
	Solves problem	☐
	Working alone	☐
	Working with other students	☐
	Demonstration/ Experimentation/ Reading out own writing	☐
	Small group discussion/ activity (student led)	☐
	Summarises students discussion	☐
	Explaining the concepts	☐
	Connecting learning to their real life	☐
	Challenging views/ ideas	☐

	Creative response/ action	☐
	learning with joy	☐
	Unable to understand the concepts	☐
	Reflecting on learning	☐
	Type of questions	
	Genuine questions	☐
	Interesting questions	☐
	Complex questions	☐
	Big questions	☐
	Guided questions	☐
	Distracting questions	☐
	Unanswerable questions	☐
	Reflective questions	☐
	Relevant questions	☐
	Irrelevant questions	☐
	Creative questions	☐
	Learner Profile attributes observed	☐
	Inquirers	☐
	Knowledgeable	☐
	Thinkers	☐
	Communicators	☐
	Principled	☐
	Open-minded	☐
	Caring	☐
	Risk-takers	☐
	Balanced	☐
	Reflective	☐

D	CLASSROOM ENVIRONMENT	E	G	S	NI
	Effective engagement of students	☐	☐	☐	☐
	Communication and confidence	☐	☐	☐	☐
	Democratic environment in classroom	☐	☐	☐	☐
	Inclusive learning environment in classroom	☐	☐	☐	☐
	Collaborative learning environment	☐	☐	☐	☐
	Inspiring learning environment in classroom	☐	☐	☐	☐
	Meeting individual needs	☐	☐	☐	☐
	Positive and negative reinforcement	☐	☐	☐	☐
	Gestures and manners	☐	☐	☐	☐
	Stimulus variation	☐	☐	☐	☐

Movement in the classroom	☐	☐	☐	☐
Ethical teacher behaviour	☐	☐	☐	☐
Comfortable seating arrangement	☐	☐	☐	☐
Grouping students as per the activity	☐	☐	☐	☐
Safe and positive environment	☐	☐	☐	☐
Freedom for students to question	☐	☐	☐	☐
Managing of internal and external disturbance	☐	☐	☐	☐
disturbing environment	☐	☐	☐	☐
Maintaining discipline	☐	☐	☐	☐
Establish routine to run the activities smoothly	☐	☐	☐	☐

CHECKLIST: Tick against the theme/method/attribute/tool/behaviour observed

1 Transdisciplinary Theme addressed

Who we are ☐
Where we are in place and time ☐
How we express ourselves ☐
How the world works ☐
How we organize ourselves ☐
Sharing the planet ☐

2 Pedagogical Approaches adopted

Chalk and talk method ☐
Program Instruction method ☐
Demonstration method ☐
Collaborative and Cooperative method ☐
Activity based method ☐
Play method ☐
Discovery method ☐
Project method ☐
Inquiry method ☐

3 Assessment techniques and tools used

Assessment techniques

Performance assessment (oral presentation, debate, role play) ☐
Process focusses assessments (how student is learning is recorded through observation, checklist) ☐
Selected responses (paper pen test) ☐
Open ended tasks ☐
Portfolios ☐

	Self assessment	☐
	Peer assessment	☐
	Assessment Tools	
	Exemplars	☐
	Checklists	☐
	Anecdotal records	☐
4	**Type of Interaction**	☐
	No interaction	☐
	With student(s)- pedagogical	☐
	With student(s)- managerial	☐
	With student(s)- social/personal	☐
	With student(s)- collaborative	☐

APPENDIX VII

INTERVIEW SCHEDULE FOR PRINCIPAL

Name of the principal Date
Name of the school
Academic Qualification
No of years as principal in the school
No of years of teaching experience
School board:
Professional development course from IB:

Questions:

1. What is the process of developing the curriculum around the IBO Primary Years Programme of Inquiry at this school? Who are the committee members? *Sub ques:* Do you invite experts from other school boards for the development of POI
2. Do you have any coordination between your school and Central Board Schools/ IB/state located in your area with regard to curriculum design? Yes/ No. If yes, give details
3. Are there any orientation/ workshops conducted for teachers before implementation of POI? - if yes, what are the major aspects discussed?
4. How do you describe inquiry based learning in PYP? transdisciplinary
5. How do you implement Learner profile in your school?
6. How do you keep track of students' academic achievement and development of Learner profile attributes?
7. How often professional development courses are conducted in the school?
8. Do you think that parents of students in your school actively contribute to effective teaching of their children as expected by the school?
9. What is the process of the IB PYP curriculum evaluation in your school? Last evaluation? How long will it take to complete one self study cycle?
10. Who are involved in the self study process? Details of stakeholders?
11. How do you describe the leadership in your school with respect to the structure and its purpose?

12. How have you build the culture mutual respect and trust among teachers, students and parents in your school? – give examples, In what ways your leadership has influenced the teachers' trust among themselves and with you?

    Probe: Are there any situations of disruptive politics in PYP school? How do you avoid/handle disruptive politics which affects the learning community?
13. How do you assign leadership roles to teachers? How do you ensure the duties are fulfilled?
14. Are there any professional learning community set up in the school? if yes, what are its activities? Are there any programs for new teachers? Give details
15. How do you update your knowledge on latest pedagogical practices, school leadership and classroom practices?

    Probe: What are the journals, magazines you refer. What are the conferences/ seminars/ workshops you have attended in last 1 – 2 years?
16. How much time do you invest on academic work and administrative work? In percentage
17. What are the major challenges/ barriers for the effective implementation of the PYP curriculum?

APPENDIX VIII

INTERVIEW SCHEDULE FOR IB PYP COORDINATOR

Date:

Name of the Coordinator

Gender:

Name of the School:

Academic Qualification

Teaching Experience in PYP:

No of Years as Coordinator:

IB professional development course:

Questions:

1. What is the structure of pedagogical leadership team- admin and academic?
2. What is the process of developing the curriculum around the IBO Primary Years Programme of Inquiry in this school?

   Sub Ques: How do you ensure the integration of all the five elements and LP in PYP curriculum?
3. Does the POI have an inclusion of history, cultural heritage, freedom movements and developments of India? If yes, give examples/ details
4. During what time of the academic year the POI is developed?
5. Who are the committee members? How many are there in the committee? (Teacher-grade/subj, experts)

   Sub ques: Do you invite experts from other school boards for the development of POI
6. How do you select the learning materials for the transaction of transdisciplinary curriculum?
7. Are there any learning materials/ guide books developed by school for students, teachers and parents? –please give details
8. Are there any orientation/ workshops conducted for teachers before implementation of POI? - if yes, what are the major aspects discussed?
9. How are time and different resources acquired and used under IB PYP?
10. How do you describe inquiry based learning in PYP?
11. How do you describe LP in your school? how it is developed and how do you know it?

12. Do you allot specific time for reflection on teaching and learning among teachers?
13. How do you guide other teachers in transacting the POI in classroom?
14. How do you keep track of students' academic achievement and development of Learner profile attributes?
15. How often professional development courses are conducted in the school?
16. Do you think that parents of students in your school actively contribute to effective teaching of their children as expected by the school?

    Probe 1: How would you describe the parents' involvement in their curriculum roles through the Parents-Teachers' Association? Are there any areas for improvement?

    Probe 2: How would you describe the quantity of parents' curriculum involvement?
17. What is the process of the IB PYP curriculum evaluation in your school?
18. When was the last PYP curriculum evaluation conducted in the school?

    Sub Question: How long will it take to complete one self study cycle?
19. How do you ensure the alignment of written, taught and assessed curriculum in PYP? Do you involve in all the process of curriculum management(development, implementation and evaluation)?
20. How have you build the culture mutual respect and trust among teachers, students and parents in your school? – give examples, In what ways your leadership has influenced the teachers' trust among themselves and with you?

    Probe: Are there any situations of disruptive politics in PYP school? How do you avoid/handle disruptive politics which affects the learning community?
21. How do you assign leadership roles to teachers? How do you ensure the duties are fulfilled?
22. Are there any professional learning community set up in the school? if yes, what are its activities?
23. How do you update your knowledge on latest pedagogical practices, school leadership and classroom practices?

    Probe: What are the journals, magazines you refer. What are the conferences/ seminars/ workshops you have attended in last 1 – 2 years?
24. What are the major challenges faced by teachers for the effective implementation of the PYP curriculum?
25. What are the major challenges faced by you as a coordinator?

APPENDIX IX

INTERVIEW SCHEDULE FOR IB PYP TEACHERS

Name of the teacher: Date:

Gender:

Grade:

Name of the School:

Teaching Experience in PYP:

IB professional development level:

Questions:

1. Are you involved in the process of developing POI? If yes, what are your roles and responsibilities?
2. Please describe from start to finish a typical day in the classroom.
3. How do you develop inquiry based lessons?
4. Why do you think inquiry based classes are helpful for students?
   Probe: Is it possible to adopt inquiry method for teaching all the topics? Are there any exceptions?
5. How do you develop learner profile attributes?
6. When and where do you observe learner profile attributes among the students?
7. Please tell us a bit about the students in your classroom. Background- multi, homogeneous; questioning, noisy, distracted, silent, moderate
8. How do you engage them actively and meaningfully in an inquiry?
9. What conditions do you feel are necessary to promote a culture of inquiry among your students?
10. What are the strategies used for inquiry, thinking and reflection in classroom? Examples
11. What are the challenges you face in involving students in inquiry? Are there any conditions that hinder inquiry in your classroom? If so, what are they?
    Probe: are there situations when the students' questions are diverted from the central idea of inquiry? Then what do you do?
12. What are the assessment techniques you adopt normally in a classroom?

13. Do you reflect on your teaching practices? When do you reflect on your teaching practices? Do you reflect along with other teachers? – how has it helped you improve your performance --- PYP planner how do you use ?
14. Overall, how comfortable you are in transacting the transdisciplinary PYP curriculum? themes focus—integration of subjects
15. How does the principal help/ support you in transacting the curriculum? Give examples/ quote instances

    Probe 1: Does the principal guide you with wide range of pedagogical approaches and classroom management techniques?

    Probe 2: Does the principal provide structured platform for collaboration and professional development of teachers?
16. Are you a part of any professional community outside school- Offline/ online- Name? How has this helped you professionally?

    If yes, how has it contributed in your teaching trans curriculum?
17. How does self study process takes place in your school? how are you involved?-roles and responsibilities
18. What are most significant challenges you have faced as an IB PYP teacher? Initially or at present

    Probe: Are there any factors from the children's side? School support? Resources? Parents? Insufficient Professional development program?
19. What are your suggestions to improve the implementation of the PYP curriculum in the classroom/school?
20. Do you have any suggestions for the IB related to the PYP curriculum and its management?

APPENDIX X

FOCUS GROUP INTERVIEW SCHEDULE FOR STUDENTS

Name and grade of participants

1. Please tell us a little bit about yourself.
2. How old are you? What grade are you in?
3. Please tell me a little bit about this school.
4. What do you like most about this school?
5. What do you like least about this school?
6. What do you like about your teachers?
7. What do your teachers do to help you learn?
8. What do you enjoy learning most?
9. What do you enjoy learning least?
10. What is the best way for you to learn something new?
11. What would help you learn more in school?
12. What is something you learned recently in school?
13. What is something you would like to learn more about?
14. Which learner profile do you like the most? Why?
15. Overall, how do you like the school?

APPENDIX XI

CODEBOOK FOR QUALITATIVE DATA ANALYSIS

Curriculum Development	
Steps involved	Processes related to curriculum development – the descriptions with process words and specific activity related to curriculum development
Orientation to parents and teachers	Eg- We give orientation for parents, we send updates for the parents to give them the clarity.
Review	Components of review, internal and external type
IB audit	
What is discussed	
POI development-Written curriculum	Data specific to POI development-interpretation of PYP framework, approaches, factors considered
Approach	
Collaboration	
Macro to micro	
Factors considered during development	
Age appropriateness	
Balance Science and Social science	
Differential expression	
End in mind	
Horizontal and vertical alignment	
Integrating PYP elements	
LP	
Learning outcomes	
Mapping with NCF	
Development of Learning material	
PYP planner	
Time distribution in PYP	
Transdisciplinary curriculum – interpretation	
Timeline of curriculum development	When are the curricular documents developed, specific timeframes for specific type of document
Actors involved	Various actors involved, their contribution, involvement in different phases

Curriculum Implementation	
Inquiry based teaching- cycle	Different phases of inquiry cycle as described by teachers
Action	
Assess and reflect	
Driving the inquiry	
Eliciting Lines of inquiry	
Non example	
Investigation	
Gathering information	
Research	
Example	
Making conclusion	
Non examples	
Prior knowledge assessment	
Sharing ideas	
Tunning in phase- Provocation	
Clarifying objective	
Unpacking central Idea	
Key Characteristics	Prominent and consistent characteristics identified by teachers on inquiry learning
Activity based	
Investigation	
Line of inquiry	
Link to next unit	
Age appropriateness	
Autonomous learning	
About learners	
Example	
Joyful learning	
Skills and attitude	
Example	
Student voice	
Build on students knowledge	
Collaborative learning	
Group activity	
Peer learning	
Differentiation	
Assessment	
Learning engagement- differenciation	
Learning engagement	
Example	
Strategies	
Examples	
Multiple perspective	
Provocation	
Real life connection	
Student Teacher relationship	
Concept based learning	

Class environment	
Key factors for implementation	Factors that support or hinder implementation, different stakeholders engagement, school conditions and culture
Parental involvement	
PD and Collaboration	
Resources	
Teachers attributes and roles	
Attitude and Attribute	
Attitude	
Attribute	
Autonomy	
Classroom management	
Co-Teaching	
Facilitation	
Allow student understanding	
Brideging learning gap	
Focus on objective	
Scafolding	
Understand learning journey	
Flexibility	
Preparedness	
Provocation from teachers	
Reflective practitioner	
Resoucesfulness	
Student reinforcement	
Student-teacher relationship	
Understanding IB	
Time	
LP implementation	Approaches, processes, strategies used for LP implementation
Technology in TL	
Transdisciplinary in practice	Interpretation and practice of transdisciplinary curriculum, key components and challenges
Addressing in general	
Application in different fields	
Conceptual lens	
Examples	
Integrating subjects	
Building on Subject base	
Non example	
Real life connection	
Seeing connections	
Identifying commonality	

Curriculum Evaluation	
IB Audit	School's engagement in IB visit, timeframe, impact on teachers
IB Visit	
Self Study	School's activities and processes for self study, timeline, division of work, step involved.
Perspectives on Self study	
Reflection and feedback	
Process	
Documentation based on Standards	
Evidence gathering	
Preparation	
Self assessment	
Curriculum	
Survey	
Timeframe for evaluation	
Actors involved	
Student assessment	Types, purposes, phases, tools for assessment
Differentiation	
Purpose of assessment	
FA and SA	
Reinforcement	
Reporting	
Tools and techniques	
Anecdotes	
Checklists	
Draw	
Essay	
Graphic organisers	
ICT	
Observation	
Oral	
Pen paper	
Play way	
Portfolio	
Reflective journals	
Role Play	
Rubrics	
Story	
Types	
Group assessement	
Individual assessment	
What is assessed	
Critics	
Who is assessing	
Parents feedback	
Peer assessment	
Self assessment	
Teacher Assessment	
Technology	

Pedagogical leadership	
Collaboration	Collaboration at diffrent levels
IC and Teachers	
Principal and PYPC	
Team and P	
Community engagement	
Distributed	Description on distribution of roles, responsibilities, power and decision making in school
Curriculum roles	
Deviation	
Dilution	
Support staff	
Professional Development (PD)	
Content of PD	
IB	
In House	
Interschool	
Other resources	
Role of Principal	
Balancing	
Building relation	
Change agent	
Dealing with change	
Involvment in the journey	
IB workshops	
Involvement in curriculum and pedagogy	
Leadership style	
PD for teachers	
Pedagogical inputs	
Principal's resourcefulness	
Support and motivate teachers	
Teacher recognition	
Role of PYP Coordinator	
Bridging	
Guiding the team	
Curriculum and pedagogy	
IB workshops	
PD for teachers	
Relation with teachers	
Teacher leadership	Leadership practices of teachers
Opportunity and contribution	
Professional network	

Challenges	
IB Philosophy and concepts	Challenges related to IB ideology and PYP framework
Assessment	
Linking IB elements	
Student centric approach	
Teaching-Learning Process	

Activity-concepts	
Assessement	
Classroom environment	
Creative and joyful learning	
Differentiation	
Factual topics	
Lack of drill and practice for basic skills	
Less disciplinary	
Making learning visible	
One on one teaching	
Planning strategies	
Preparedness of students	
Resources	
Student Language competency	
Teaching-Learning material	
Time constraint	
Written curriculum	
Change in topics	
Micro planning	
NCF mapping	
Leadership	Challenges due to leadership
Macro forces	
Managerial issues	Managerial challenges/ issues,
Parental support	Challenges related to parents
School's ambitions	Challenges due to school’s expectation and aspirations
Teacher attributes	Challenges related to teachers
Attitude	
Experience	
Passionate	
Preparedness	
Provocation	
Resourceful	
Teacher extra work	
Teacher Attrition	

Student Perspectives	
About School	Perceptions about school
All round development	
Ethos	
Infrastructure	
Greenary	
Reflecting space	
Resources	
Sports	

Technology	
Washrooms	
IB understanding	Perception on IB and PYP practices
Learner Profile perspectives	Perspectives on Learner Profile
Perspectives on Learning	Perspectives on learning
Eng	
ICT	
Inquiry	
Lib	
Math	
Music	
Novel reading	
PE	
POI,UOI	
Science	
Perspectives on Teachers	Perspectives on teachers
Building student confidence	
Clarifying objective	
Classroom management	
Co teachers	
Real life connection	
Student teacher relationship	
Teacher attributes	
Understanding students	
Perspectives on Teaching method	Perspectives on Teaching method
Assessment	
Individualised teaching	
Learning method	
activity based	
Group-collab	
Learning process	
Building on previous knowledge	
Conclusion	
Differentiation	
Elicie understanding	
Fun way	
Making conclusion	
Multi media	
Multiple perspective	
Peer learning	
Practice	
Prior assessment	
Questioning	
Real life application	
Reflect and assess	
Research	
Sharing ideas	
Strategies	
Students voice	
Thinking	

APPENDIX XII
SAMPLE PROGRAMME OF INQUIRY

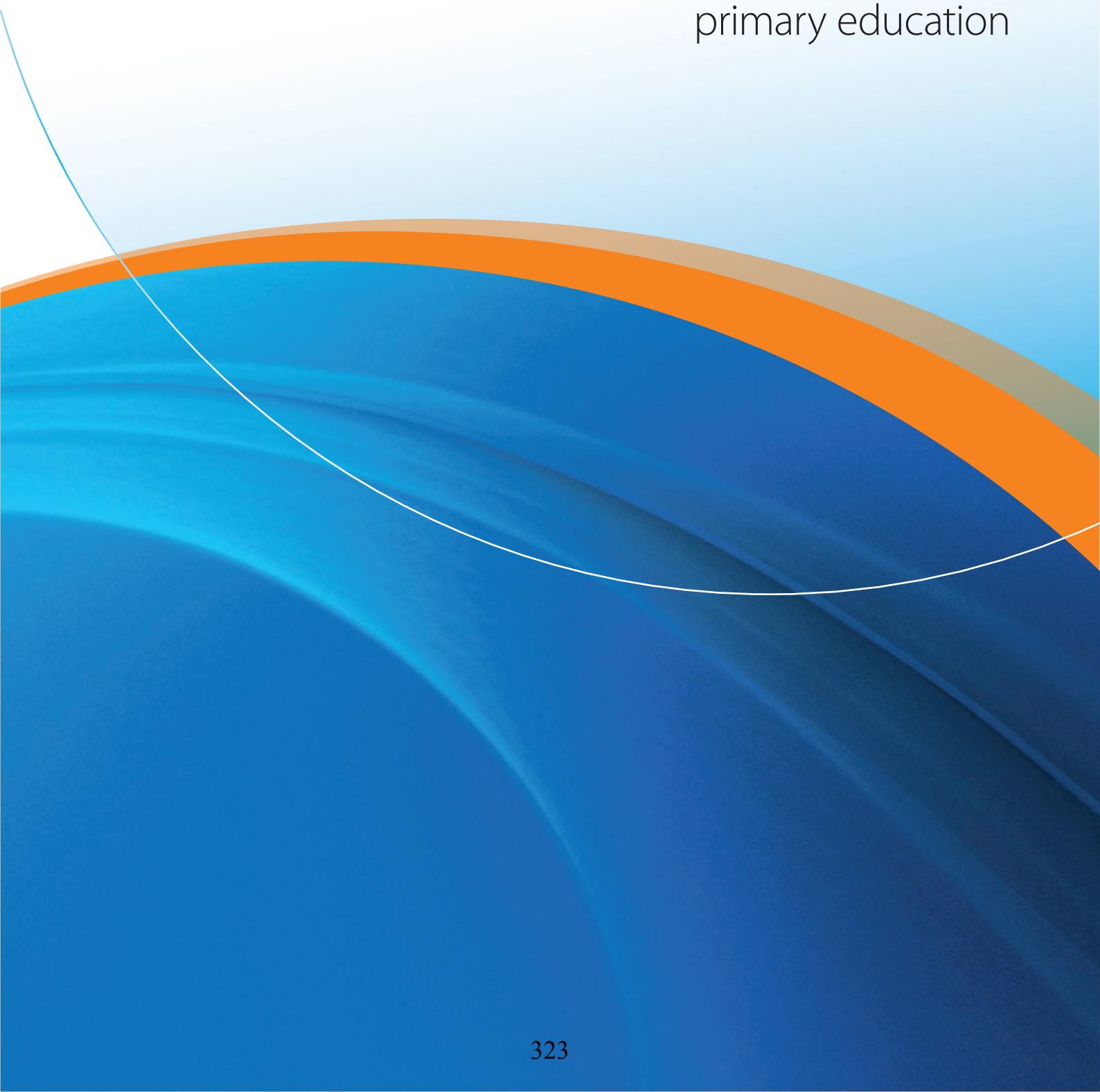
Theme	*Who we are*	*Where we are in place and time*	*How we express ourselves*	*How the world works*	*How we organize ourselves*	*Sharing the Planet*
Grade	**An inquiry into the nature of the self, beliefs and values, personal, physical, mental, social and spiritual health, human relationships including families, friends, communities and cultures, rights and responsibilities, what it means to be humans.**	**An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.**	**An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.**	**An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.**	**An inquiry into the interconnectedness of human –made systems and communities; the structure and function of organizations; societal decision –making; economic activities and their impact on humankind and the environment.**	**An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.**
PP–I	**Descriptor/s:** An inquiry into the nature of the self **Central Idea:** Every day I learn something more about myself **An inquiry into:** • Knowing about myself • Learning how to manage myself **Key Concepts:** Form, Function & Reflection **Related Concepts:** Communication, Evidence	**Not done in this grade.**	**Descriptor/s:** An inquiry into the ways in which we express ideas, feelings, nature, culture, beliefs and values **Central Idea:** Music and movement help in discovering ourselves **An inquiry into:** • Expressing oneself • How rhythmic patterns create music **Key Concepts:** Perspective, Form & Function **Related Concepts:** Opinion, Communication	**Not done in this grade.**	**Descriptor/s:** An inquiry into the structure and function of organizations **Central Idea:** Community helpers organize safety and wellbeing **An inquiry into:** • People who help us in the community • Institutions that help the community • Importance of community helpers **Key Concepts:** Form, Function & Causation **Related Concepts:** Properties & Role	**Descriptor/s:** An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things **Central Idea:** We share nature with other living things **An inquiry into:** • Our needs and the needs of other living things for growth • Our responsibility for the wellbeing of other living things **Key Concepts:** Connection, Change & Responsibility **Related Concepts:** Interdependence, Initiative & Growth
PP – II	**Descriptor/s:** An inquiry into personal, physical, social health **Central Idea:** Health and hygiene depends upon our habits **An inquiry into:** • Taking care of my body • Eating healthy food • Speaking softly **Key Concepts:** Connection, Causation & Responsibility **Related Concepts:** Relationship, Consequence	**Not done in this grade.**	**Descriptor/s:** An inquiry into the ways in which we reflection, extend and enjoy our creativity **Central Idea:** Stories help in developing language and teach values **An inquiry into:** • Reading and narrating stories • Presenting stories in different ways **Key Concepts:** Reflection, Form & Perspective **Related Concepts:** Interpretation & Opinion	**Not done in this grade.**	**Descriptor/s:** An inquiry into the interconnectedness of human-made systems **Central Idea:** Needs are met by human made systems which process the products **An inquiry into:** • Basic and other needs • How human made systems work to meet our needs • Changes products go through **Key Concepts:** Connection & Change **Related Concepts:** Systems, Transformation	
Grade: I	**Descriptor/s:** An inquiry into the human relationships including families, friends, communities and cultures, rights and responsibilities **Central Idea:** Knowing about the people around, helps us understand ourselves and others **An inquiry into:** • Personal abilities and interests • Roles and behaviours within relationships • Physical and emotional characteristics **Key Concepts:** Form, Perspective & Reflection **Transdisciplinary Focus:** Language, PSPE & Social studies **Related Concepts:** Character, Community, Culture, Family & Diversity	**Descriptor/s:** An inquiry into the homes and journeys **Central Idea:** Needs of living things depend on where they are in the world **An inquiry into:** • Need for shelter, communication and transport • Different environments that determine the needs • Understanding the needs of the homeless **Key Concepts:** Form, Connection & Responsibility **Transdisciplinary Focus:** Language & Social studies **Related Concepts:** Communication, Transportation, Locality & Geography	**Descriptor/s:** An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values **Central Idea:** Visuals communicate ideas and thoughts **An inquiry into:** • Visual communications • The use of pictures, songs and videos • How we interpret and respond to visuals **Key Concepts:** Function & Reflection **Transdisciplinary Focus:** Art & Language **Related Concepts:** Viewpoints, Perspective, Illustration & Communication	**Descriptor/s:** An inquiry into the interaction between the natural world (physical and biological) and human societies **Central Idea:** Natural cycles change our lifestyle **An inquiry into:** • Natural elements around us • Sunrise and sunset affect us • Seasons and the changes they bring **Key Concepts:** Form, Connection & Causation **Transdisciplinary Focus:** Science, Social Studies, Math & Language **Related Concepts:** Climate, Seasons & Geography	**Descriptor/s:** An inquiry into societal decision making **Central Idea:** Good choices lead to responsible actions **An inquiry into:** • Consequences of choices • Factors that influence our choices • Making choices to bring good change. **Key Concepts:** Connection, Causation & Change **Transdisciplinary Focus:** Language & PSPE **Related Concepts:** Character, Perseverance, Initiative, Self Regulation & Resilience	**Descriptor/s:** An inquiry into communities and the relationships within and between them **Central Idea:** Needs of communities are met through dependence and interdependence **An inquiry into:** • Needs of all communities • Sources to meet these needs • What we can do for other living things **Key Concepts:** Form, Connection & Responsibility **Transdisciplinary Focus:** Science, Social studies & Language **Related Concepts:** Conservation, Interdependence & Sustainability
Grade: II	**Descriptor/s:** An inquiry into rights and responsibilities. **Central Idea:** Shared responsibility leads to a safer environment **An inquiry into:** • What is responsibility • What is shared and collective responsibility • Creating a safe environment **Key Concepts:** Connection, Reflection & Responsibility **Transdisciplinary Focus:** PSPE, Social studies & Language **Related Concepts:** Roles, Communication, Family & Rights **Approaches to Learning:** Thinking, Communication & Self- management skills	**Descriptor/s:** An inquiry into personal histories **Central Idea:** Actions of people shape the future **An inquiry into:** • People who made a difference • Qualities that make people into leaders • Leaders in everyday life **Key Concepts:** Change, Connection & Perspective **Transdisciplinary Focus:** Social studies & Language **Related Concepts:** Progress, Discovery & Innovation **Approaches to Learning:** Thinking & Social skills	**Descriptor/s:** An inquiry into our appreciation of the aesthetic. **Central Idea:** Puppetry is a creative form to tell stories and entertain **An inquiry into:** • Different types of puppets • How stories are conveyed through puppets • Elements of entertainment in puppetry **Key Concepts:** Form, Function & Connection, **Transdisciplinary Focus:** Art, Social Studies & Language **Related Concepts:** Identity, Artifacts, Traditions, Techniques & Performance **Approaches to Learning:** Social & Communication skills	**Descriptor/s:** An inquiry into understanding of scientific principles. **Central Idea:** Changing the movement of an object requires a net force to be acting on it **An inquiry into:** • Nature of force and motion • How forces affect motion • How humans use forces and motion in their lives **Key Concepts:** Form, Causation & Connection **Transdisciplinary Focus:** Science, PSPE & Language **Related Concepts:** Mechanics & Body Control **Approaches to Learning:** Thinking & Research skills **Attitudes:** Curiosity & Creativity **Attribute:** Knowledgeable & Inquirer	**Descriptor/s:** An inquiry into the structure and function of organizations. **Central Idea:** People develop rules and systems for organizing themselves **An inquiry into:** • The function of an organization • Structure of learning • How practices and policies help people organize themselves. **Key Concepts:** Function, Responsibility & Perspective **Transdisciplinary Focus:** Social studies, PSPE & Language **Related Concepts:** Organization, Citizenship, Roles, Responsibility, Autonomy& Initiative **Approaches to Learning:** Research, Communication & Self management skills	**Descriptor/s:** An inquiry into access to equal opportunities **Central Idea:** Water is essential to life, and is a limited resource for many people **An inquiry into:** • Sources of water and how water is used • Distribution and availability of usable water • Responsibilities regarding water **Key Concepts:** Form, Function & Responsibility **Transdisciplinary Focus:** Science, Social studies & Language **Related Concepts:** Resources, Systems, Water Cycle, Conservation, Distribution & Interdependence **Approaches to Learning:** Research & Communication skills

APPENDIX XII
SAMPLE PROGRAMME OF INQUIRY

Grade: III	**Descriptor/s:** An inquiry into nature of the self **Central Idea:** Growth can be measured through changes in capabilities and physique **An inquiry into:** • Physical traits and capabilities of my body • Interactions of the body systems during exercise • Changing capabilities in human body **Key Concepts:** Form, Reflection & Change **Transdisciplinary Focus:** Science, PSPE & Language **Related Concepts:** Genetics, Growth, Evolution, Aesthetics, Body Form, Body Control, Biomechanics, Energy, Growth, Improvement, Endurance, Spatial Awareness, Strength & Rest	**Descriptor/s:** An inquiry into orientation in place and time **Central Idea:** All places on earth have special features that distinguish them from other places **An inquiry into:** • The Physical characteristics of Earth • Implications of a place's geographic location • Factors that affect development of a place **Key Concepts:** Form, Causation & Connection **Transdisciplinary Focus:** Social Studies & Language **Related Concepts:** Borders, Landscape, Geography & Regions	**Descriptor/s:** An inquiry into the ways in which we reflect on, extend and enjoy our creativity **Central Idea:** Toys and games stimulate creativity **An inquiry into:** • Different types of toys and games • History behind toys and games • Creative elements in making toys **Key Concepts:** Function, Connection & Perspective **Transdisciplinary Focus:** Social Studies & Language **Related Concepts:** Artifacts, History & Innovation	**Central Idea:** Objects in the universe can affect other objects at a distance **An inquiry into:** • Laws of nature • How movement of earth affects other objects • How Sun affects the universe **Key Concepts:** Change, Causation & Connection **Transdisciplinary Focus:** Science & Language **Related Concepts:** Gravity, Seasons, Space, Solar System & Magnetism	**Descriptor/s:** An inquiry into economic activities and their impact on humankind and the environment **Central Idea:** Developing independence builds self-worth and personal responsibility **An inquiry into:** • Knowing one's self worth • Demonstrating a sense of competence • Valuable life skills **Key Concepts:** Function & Reflection **Transdisciplinary Focus:** PSPE, Math & Language **Related Concepts:** Autonomy, Self Regulation, Citizenship, Fair Play, Goal Setting, Mastery, Addition, Subtraction, Multiplication, Money & Estimation	**Descriptor/s:** An inquiry into struggle to share finite resources with other people and with other living things **Central Idea:** Living things adapt in order to survive in their habitat **An inquiry into:** • Natural habitats of living things • Plants and animals adapt to environmental condition • How people can help species to survive **Key Concepts:** Form, Change & Responsibility **Transdisciplinary Focus:** Science, Social Studies & Language **Related Concepts:** Habitat, Adaptation, Biodiversity, Geography & Regions
Grade: IV	**Descriptor/s:** An inquiry into personal, physical, mental, social and spiritual health **Central Idea:** Healthy lifestyle is dependent on a balance of interconnected factors **An inquiry into:** • Healthy lifestyle • Factors that contribute in maintaining a healthy lifestyle • Changes that I can bring in my lifestyle **Key Concepts:** Form, Function, Connection & Reflection **Trans disciplinary Focus:** Science, PSPE & Language **Related Concepts:** Systems, Self-Regulation, Growth, Goal Setting, Strength & Endurance	**Descriptor/s:** An inquiry into the discoveries, explorations **Central Idea:** Exploration leads to discovery and can develop new understandings **An inquiry into:** • Why people explore • Significant explorations and discoveries through time • How understanding changes and develops through exploration **Key Concepts:** Causation, Change & Perspective **Trans disciplinary Focus:** Social Studies & Language **Related Concepts:** Innovation, Migration, Discovery & Exploration	**Descriptor/s:** An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values **Central Idea:** People can discover new ways to express themselves by exploring dance forms of other places and cultures. **An inquiry into:** • Various forms of dance • Components of dance • Origin and cultural expression of dance forms **Key Concepts:** Form & Perspective **Trans disciplinary Focus:** Social studies, Art & Language **Related Concepts:** Culture, Traditions & Techniques	**Descriptor/s:** An inquiry into the impact of scientific and technological advances on society and on the environment **Central Idea:** Application of scientific knowledge helps in facilitating human work **An inquiry into:** • Scientific applications that make work easier • Understanding the working of machines • Effects of scientific advances on the people **Key Concepts:** Function, Causation & Reflection **Trans disciplinary Focus:** Science & Language **Related Concepts:** Mechanics & Technological Advances	**Descriptor/s:** An inquiry into interconnectedness of human-made systems and communities **Central Idea:** Collaboration between and within communities help attain shared goals **An inquiry into:** • Identifying shared goals • Nuances of collaboration • Attitudes and skills needed for collaboration **Key Concepts:** Function, Connection & Responsibility **Trans disciplinary Focus:** Social, PSPE & Language **Related Concepts:** Communication, Cooperation, Community, Collaboration & Team Work	**Descriptor/s:** An inquiry into communities and the relationships within and between them **Central Idea:** Flow of energy makes life possible on this planet **An inquiry into:** • How energy passes from the Sun to living things • Ecological relationship of living things • Human intervention in the ecological balance **Key Concepts:** Causation, Connection & Responsibility **Trans disciplinary Focus:** Science & Social Studies **Related Concepts:** Ecosystems, Classification & Ecology
Grade: V	**Descriptor/s:** An inquiry into what it means to be human **Central Idea:** The brain's ability to change and adapt is central to life **An inquiry into:** • Brain as an organ • Role of brain in human life • How active brain can enrich life **Key Concepts:** Form, Function & Reflection **Transdisciplinary Focus:** PSPE, Science & Language **Related Concepts:** Behaviour Learning, Meta-Cognition, Mastery, Improvement & Systems	**Descriptor/s:** An inquiry into the interconnectedness of individuals and civilizations **Central Idea:** Civilization of societies is a dynamic and continuous process **An inquiry into:** • Aspects of past civilizations that have survived • How civilizations changed the lifestyle of people • Implication for the future **Key Concepts:** Connection, Change & Perspective **Transdisciplinary Focus:** Social Studies & Language **Related Concepts:** Artifacts, Traditions, Chronology, Civilization, History & Regions	**Descriptor/s:** An inquiry into our appreciation of the aesthetic **Central Idea:** Music is composed and performed for many purposes **An inquiry into:** • Various forms of music • Components of music • Origin and cultural expression **Key Concepts:** Form & Perspective **Transdisciplinary Focus:** Art & Social Studies **Related Concepts:** Techniques, Culture & Traditions	**Descriptor/s:** An inquiry into the natural world and its laws **Central Idea:** Matter can be transformed and used for a variety of purposes **An inquiry into:** • States of matter • How matter can be scientifically changed • How transforming matter is used to solve real world problems **Key Concepts:** Form, Change & Responsibility **Transdisciplinary Focus:** Science & Language **Related Concepts:** Changes of State, Solids, Liquids, Gases, Systems, Chemical & Physical Changes	**Descriptor/s:** An inquiry into the societal decision-making **Central Idea:** Self reliance and persistence develop independence **An inquiry into:** • Taking right decisions for oneself • The attitudes, beliefs and opinions that affect our actions • Setting goals and priorities **Key Concepts:** Function, Responsibility & Reflection **Transdisciplinary Focus:** PSPE, Social Studies & Language **Related Concepts:** Role & Identity	**Descriptor/s:** An inquiry into the peace and conflict resolution **Central Idea:** Conflicts of the world have solutions in peaceful approach **An inquiry into:** • Importance of peace • Conflicts and their causes • Living and working together peacefully **Key Concepts:** Perspective, Causation & Reflection **Transdisciplinary Focus:** Social Studies, PSPE & Language **Related Concepts:** Conflict, Culture & Peace
Grade: VI	**Descriptor/s:** An inquiry into the personal, physical, mental, social and spiritual health **Central Idea:** Human body is a complex system of biology, physics and chemistry **An inquiry into:** • Cellular structure in human body, Systems within the body • Dynamic equilibrium in a human body • Chemical changes **Key Concepts:** Form, Function, Connection & Change **Transdisciplinary Focus:** Science, Language, PSPE & Math **Related Concepts:** Body Control & Ratio	**The PYP Exhibition**	**Descriptor/s:** An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values **Central Idea:** Rituals, traditions and artifacts provide a window into the beliefs and values of cultures **An inquiry into:** • What constitutes a culture • Significance of rituals and traditions • How artifacts symbolize beliefs and values **Key Concepts:** Function, Perspective & Reflection **Transdisciplinary Focus:** Social Studies & Language **Related Concepts:** Beliefs & Diversity	**Central Idea:** Application of scientific principles lead to inventions and discoveries **An inquiry into:** • Scientific principles in the world • Application of scientific principles to create my inventions • Impact of scientific principles in the world **Key Concepts:** Function, Causation & Connection **Transdisciplinary Focus:** Science & Language **Related Concepts:** Mechanics, Magnetism, Technological Advances, Efficiency & Physics	**Descriptor/s:** An inquiry into the economic activities and their impact on humankind and the environment **Central Idea:** Communities and their citizens have a collective responsibility to care for local and global environments **An inquiry into:** • Activities that care for environment • Changes that communities can bring • Norms of behaviour within different groups **Key Concepts:** Connection, Change & Responsibility **Transdisciplinary Focus:** Social Studies & PSPE **Related Concepts:** Self Regulation, Autonomy, Character, Diversity, Fulfillment, Teamwork, Truth, Education & Cooperation	**Descriptor/s:** An inquiry into the communities and the relationships within and between them **Central Idea:** Interdependence of organisms in a biosphere maintains the balance of an ecosystem **An inquiry into:** • Ecosystem and biomes • Interdependence within ecosystems, biomes and environment • Effect of human interaction on the balance of ecosystem **Key Concepts:** Change, Connection & Responsibility **Transdisciplinary Focus:** Science, Social Studies & Language **Related Concepts:** Ecosystem, Biodiversity, Interdependence, Conservation & Ecology

APPENDIX XIII
PYP CURRICULUM FRAMEWORK

Making the PYP happen:
A curriculum framework for international primary education



Introduction

Making the PYP happen: A curriculum framework for international primary education is an in-depth guide to all aspects of student learning in the context of the Primary Years Programme (PYP) of the International Baccalaureate (IB). Within the PYP it is believed student learning is best done when it is authentic—relevant to the "real" world; and transdisciplinary—where the learning is not confined within the boundaries of traditional subject areas but is supported and enriched by them. It is a programme that each student will engage with in ways that are developmentally appropriate and it is intended that schools will implement the programme in an inclusive manner.

It is a guide to curriculum in the traditional sense of a written set of objectives ("What do we want students to learn?") but also a guide to the theory behind, and application of, good classroom practice ("How best will they learn?"), and including effective and appropriate assessment ("How will we know what they have learned?"). Since the PYP curriculum is viewed as an articulated and iterative model, these three components of the curriculum model have been used to organize the implementation of the programme.

The PYP represents a combination of wide-ranging research and experience—excellent practice derived from a variety of national system and independent schools, and from IB World Schools offering a coherent programme of international education. In translating the thinking represented in this document into practice, it is essential for teachers to use the practical material that is included to plan their teaching and assessing, and to evaluate their work for successful implementation of the programme. *The PYP in the early childhood years (3–5 years)* (2000) and the *PYP assessment handbook* (2001) have now been incorporated into this revised document.

Making the PYP happen: A curriculum framework for international primary education is also a response to practical questions raised by school leaders who are often obliged to respond to pressures from many, sometimes conflicting, sources. It is likely that they might appreciate some support themselves, in the form of the best advice that the IB can offer—a concise, accessible overview of key issues linked to practical ideas for action. In the PYP, it is recognized that improvements, and therefore changes, in the classroom only happen in the context of overall school improvement. Given the vital role of the school's leadership in this process, it is clear that the implementation of the PYP curriculum framework will depend to a large extent on the support and, more importantly, the practical involvement of the school's leadership. Further support for PYP principals and coordinators can be found in *Making the PYP happen: Pedagogical leadership in a PYP school* (published separately).

The IB trusts that these publications will serve their purpose and prove to be useful resources as we work together to improve the quality of learning for students, teachers, parents and administrators in the international community of learners.

What are the beliefs and values that drive the PYP?

What do we believe international education to be?

A driving force behind the PYP is a deeply held philosophy about the nature of international education, a philosophy expressed in the statements that follow. Firstly, the mission statement of the IB expresses the IB's overall purpose as an organization promoting and developing programmes of international education. Secondly, the section "International-mindedness: the PYP perspective" sets out our beliefs and values as defined by the outcomes of student learning in PYP schools. The IB defines this learning through a learner profile that encompasses the aims of the curriculum.

Additionally, this section goes on to identify policies and practices within our schools that are worth examining and developing further as we strive to become ever more internationally minded communities of learners.

The mission statement of the International Baccalaureate

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

International-mindedness: the PYP perspective

In the PYP, the attempt to define international-mindedness in increasingly clear terms, and the struggle to move closer to that ideal in practice, are central to the mission of PYP schools.

Given the variety and complexity of PYP schools, and the elusive nature of the concept itself, it would be naive to propose any simple definition and expect it to stand up to rigorous examination. Rather, the IB would suggest that the definition is compound, reflecting a range of interrelated factors that are discussed throughout this document.

However, in examining these factors during the years since the inception of the PYP, one aspect of PYP schools emerges, not only as the most compelling, but also as the common ground on which PYP schools stand, the essence of what they are about. This is the kind of student we hope will graduate from a PYP school, the kind of student who, in the struggle to establish a personal set of values, will be laying the foundation upon which international-mindedness will develop and flourish. The attributes of such a learner are listed in the learner profile (see figure 1). The learner profile is central to the PYP definition of what it means to be internationally minded, and it directs schools to focus on the learning. IB World Schools should be proud to send out into the world students who exemplify the attributes expressed in this profile.

The IB is conscious that this learner profile is value-laden and, it would say, quite rightly so, for this kind of learning is what the IB supports, and it is the embodiment of what the IB believes about international education. The attributes described in the learner profile are appropriate to, and achievable by, all primary years students. The teacher needs to interpret these attributes in a manner appropriate to the age and development of the student. That said, part of the adaptability and versatility of the programme lies in what these attributes may look like from one school culture to another.

In the PYP, it is both recognized and appreciated that students come into the programme from various backgrounds and with a wealth of experience. All teachers have a responsibility to assess student development in the context of the IB learner profile; it affects all students throughout the programme. Schools have a responsibility on behalf of all students to assess and report on progress in the development of the attributes of the learner profile.

What, then, is a PYP school? It is a school that, regardless of location, size or constitution, strives towards developing an internationally minded person. What is an internationally minded person? It is a person who demonstrates the attributes of the IB learner profile.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

Figure 1

Clearly, success in developing this profile will depend on more than just curriculum, even given the PYP inclusive definition of curriculum. It will depend on a multitude of factors, each contributing to overall success, each driven by beliefs and values embodied in the profile.

How does a PYP school develop international-mindedness within its community of learners?

In the context of the PYP, the school is considered to be a **community of learners**. The knowledge base that informs effective practice, particularly in the areas of brain research and cognition, is continually growing, and consequently teachers need to be, and be seen to be, lifelong learners. A school's commitment to effective ongoing professional development will be the hallmark of a school energetic enough and courageous enough to embrace change for the betterment of student learning. The effect that a commitment to implement the PYP has on a school culture is substantial in all cases, and breathtaking in some.

A PYP school needs to ensure that its **mission statement** is in line with that of the IB and that, together with the learner profile, it adds vitality to the life of the school community and has a particular impact on teaching and learning.

As well as presenting schools with a philosophical perspective on what international education may be, the PYP prescribes a **curriculum framework** of essential elements—knowledge, concepts, skills, attitudes, and action—each of which is reflected in the learner profile and is a reference point for the construction of a school's curriculum. How these essential elements help to frame the school's curriculum is explored later in this document.

One of these essential elements is the promotion of a particular set of **attitudes**—appreciation, commitment, confidence, cooperation, creativity, curiosity, empathy, enthusiasm, independence, integrity, respect and tolerance. Some attitudes contribute directly to individual attributes of the profile, for example, "empathy" to "caring", whereas some attitudes have a more pervasive influence on the development of many of the attributes of the profile. It would be simplistic to the point of incorrectness to assume a one-to-one correspondence between the attitudes and the attributes of the profile. It would also be difficult to claim that a focus on the development of the attitudes is necessarily a precursor to the development of the attributes of the learner profile. It is more likely that an awareness on the part of the students of the attitudes valued within the community, and an explicit demonstration of those attitudes on their part, will take place along with their development in the context of the learner profile.

The IB has developed **implementation standards** that are common across all its programmes, each of which is supported by a list of **required practices**. These standards have been developed to contribute to the complex model of international education that is exemplified by each of the programmes. For example, standard A2, relating to philosophy, states that "The school promotes international-mindedness on the part of the adults and the students in the school community", and a practice supporting that standard, A2.5, states "The school provides students with opportunities for learning about issues that have local, national and global significance, leading to an understanding of human commonalities."

It is appropriate to note at this point that there is a practice requiring a PYP school to offer a language, in addition to the language of instruction, to students from the age of 7. Exposing students to languages other than their mother tongue provides an insight into and an appreciation of other cultures, and an awareness of other perspectives. The complete list of standards and practices is available on the IB website, http://www.ibo.org, and in the *PYP coordinator's handbook*.

Through acknowledging and struggling to meet the diverse needs of the student—physical, social, intellectual, aesthetic, cultural—PYP schools ensure that the learning is **engaging**, **relevant**, **challenging** and **significant**. What adds significance to student learning in the PYP is its commitment to a **transdisciplinary**

model, whereby themes of global significance that transcend the confines of the traditional subject areas frame the learning throughout the primary years, including in the early years. These themes promote an awareness of the human condition and an understanding that there is a commonality of human experience. The students explore this common ground collaboratively, from the multiple perspectives of their individual experiences and backgrounds. This sharing of experience increases the students' awareness of, and sensitivity to, the experiences of others beyond the local or national community. It is central to the programme and a critical element in developing an international perspective, which must begin with each student's ability to consider and reflect upon the point of view of someone else in the same class.

On examining the learner profile and other listed factors that contribute to international-mindedness as demonstrated in a PYP school, it is tempting to point out that these elements would be desirable in national schools as well as in international schools. International-mindedness in education is, thankfully, not the sole property of international schools. It is an ideal towards which all schools should strive, but one that carries a greater imperative for PYP schools.

To summarize, when seeking evidence of international-mindedness in PYP schools, teachers need to look at what the students are learning, how they are demonstrating that learning, and how to nurture students within the school community. They need to consider whether students are making connections between life in school, life at home and life in the world. By helping students make these connections and see that learning is connected to life, a strong foundation for future learning is established. In striving to make it happen, and in looking for indicators of success, teachers, principals and/or heads of schools need to look everywhere, since all aspects of the school, from overarching philosophy through to policies and their ensuing practices, will reflect either the presence or the absence of a sensitivity to the special nature of PYP schools.

What do we believe about how children learn?

The PYP curriculum model is dependent on our commitment to a particular belief about how children learn, encapsulated most clearly in the constructivist approach. It is acknowledged that learners have beliefs about how the world works based on their experiences and prior learning. Those beliefs, models or constructs are revisited and revised in the light of new experiences and further learning. As we strive to make meaning of our lives and the world around us we travel continually on the cyclic path of constructing, testing, and confirming or revising our personal models of how the world works.

Vygotsky defined learning as "the creation of meaning that occurs when an individual links new knowledge with…existing knowledge" (Williams and Woods 1997). Consequently, when planning to teach it is important to ascertain students' prior knowledge, and provide experiences through the curriculum and through the environment that give them opportunities: to test and revise their models, to allow them to make connections between their previous and current perceptions, to allow them the freedom to construct their own meaning.

Other theorists, including Bruner (1990) and Gardner (1993), have also argued that the focus of teaching curriculum content needs to change to enable teachers to make connections between learners' existing knowledge and their individual learning styles in the context of new experiences. This challenge is addressed in the PYP by providing opportunities for students to build meaning and refine understanding, principally through structured **inquiry**. As students' learning and their attempts to understand the world around them are essentially social acts of communication and collaboration, this inquiry may take many forms, with students working sometimes on their own, with partners, or in larger groups.

In PYP schools, the teachers' structuring of new experiences, and the support they give to students' ideas about new experiences, are fundamental to students' knowledge, understanding, and conceptual development—the ability to have an understanding of abstract concepts, to make links between them, and

to think conceptually. In the PYP it is recognized that development and learning are interrelated, and the PYP curriculum framework allows for concept development that applies across and beyond subject-specific areas.

The programme supports the student's struggle to gain understanding of the world and to learn to function comfortably within it, to move from not knowing to knowing, to identify what is real and what is not real, to acknowledge what is appropriate and what is not appropriate. To do this, the student must integrate a great deal of information, and apply this accumulation of knowledge in a cohesive and effective way.

In the PYP, it is believed that learning takes place best when it is connected to what is genuinely a component of the world around the student, not merely what is all too often contrived and then imposed upon the student in school; that the acquisition of knowledge and skills and the search for meaning and understanding are best done in the context of the exploration of relevant content. PYP schools should provide students with learning experiences that are engaging, relevant, challenging and significant, in learning environments that are stimulating and provocative, where:

- adults are sensitive facilitators of the process of empowering students to value their learning and to take responsibility for it
- students are seen as competent and are listened to
- students are encouraged to be curious, be inquisitive, ask questions, explore and interact with the environment physically, socially and intellectually
- explicit learning outcomes and the learning process are made transparent to the students
- students are supported in their struggle for mastery and control on their journey to become independent, autonomous learners
- the learning experiences are differentiated to accommodate the range of abilities and learning styles in the group
- the collaboration on the part of all the PYP teachers is high, and there is a commitment to the transdisciplinary model at the core of this programme of international education.

In the PYP, it is acknowledged that experiences during the **early years** lay the foundations for all future learning. Research indicates that the rapid rate of development that occurs in the physical, social, emotional, intellectual and aesthetic domains is particularly significant. It is our responsibility as educators to recognize and maximize this crucial stage of learning.

Although development usually occurs in recognizable and predictable directions, it is unique in each child, occurring at varying rates from child to child, and inconsistently for each child. For many children, these early years also mark the first transition from home to group experiences outside of the family and to new physical environments. The school must strive to make this adjustment as successful as possible by encouraging the development of secure and trusting relationships with new adults and peers.

Teachers of students in the early years are encouraged to support students' interests, build up their self-esteem and confidence, and respond to spontaneous events, as well as support the development of skills in all cognitive areas in relevant ways. Children, from birth, are full of curiosity, and the PYP provides a framework that gives crucial support for them to be active inquirers and lifelong learners.

What is curriculum?

An aim of the PYP is to create a transdisciplinary curriculum that is engaging, relevant, challenging and significant for learners in the 3–12 age range. In developing a curriculum of international education for primary school students, the PYP definition of curriculum is broad and inclusive. The IB believes that:

- all students should be supported to participate in the programme to the fullest extent possible
- the school's curriculum includes all those student activities, academic and non-academic, for which the school takes responsibility, since they all have an impact on student learning.

A PYP school needs to demonstrate that all teaching and learning for which it is responsible is seen as an interpretation of the PYP in action. The influence of the PYP is pervasive within a school and has an explicit impact on all aspects of the functioning of the school community. The school community needs to accept that the effect of the PYP will be systemic and all encompassing, so that change takes place within the school for the betterment of all students. One of the aims of the PYP is to ensure that students experience coherence in their learning, regardless of which teacher has responsibility for them at any particular point in time.

Furthermore, given the PYP commitment to continuous school improvement, it is obvious that the development of **the written curriculum**, the expression of issues, concepts and ideas on paper, is necessary; but, equally obviously, this alone is not sufficient.

The interpretation of the commonalities of the written curriculum into daily practice by teachers, working in schools around the world, strengthens the connections within the global community of PYP schools. In the PYP, therefore, equal emphasis is given to methodology, to **the taught curriculum**, to suggestions for examining and improving our practice and to the provision of in-service support.

The third component in the PYP definition of curriculum, **the assessed curriculum**, is concerned with the assessment of the actual learning that takes place for each student, a component that can often be neglected or inappropriately practised. The development of a range of authentic and targeted assessment strategies, focused on the learning, brings balance and integrity to the curriculum and reminds teachers of its purpose.

The PYP definition of curriculum, then, emerges as comprising three interrelated components. In keeping with the PYP commitment to inquiry, these three components are expressed in the form of the following three open-ended questions, each of which compels teachers to think deeply about their own practice with regard to student learning.

What do we want to learn?	**The written curriculum** the identification of a framework of what's worth knowing
How best will we learn?	**The taught curriculum** the theory and application of good classroom practice
How will we know what we have learned?	**The assessed curriculum** the theory and application of effective assessment

In the PYP the pronoun "we" is used in each question, rather than referring directly to the students, for reasons that reflect the PYP belief about a school being a community of learners. While recognizing that a

school's primary responsibility is for student learning, a school is encouraged to see itself as a community where everyone is a learner, where teachers must continually learn about the needs and capabilities of each student, the content with which they are engaged, and about their own practice and ongoing professional development.

Presenting the questions in this form prompts teachers to present them in a similar way to students, providing an opportunity to make them aware of the curriculum framework and of the uniqueness of the PYP, and directly engaging them in thinking about their own learning.

In PYP documents, these three questions are presented as a composite curriculum model where each component is equally valued. In figure 2, the double-headed arrows indicate that developing, implementing and assessing the school's curriculum is an iterative process, whereby each component informs the other two. This is not a linear curriculum model that ends with the assessment component. Rather, it illustrates a process that is more finely tuned, whereby all three components are woven together throughout. Most certainly it requires that consideration of the assessment of the learning be thought about much sooner, and in more depth, than is traditionally the case.

Learners constructing meaning: the PYP definition of curriculum

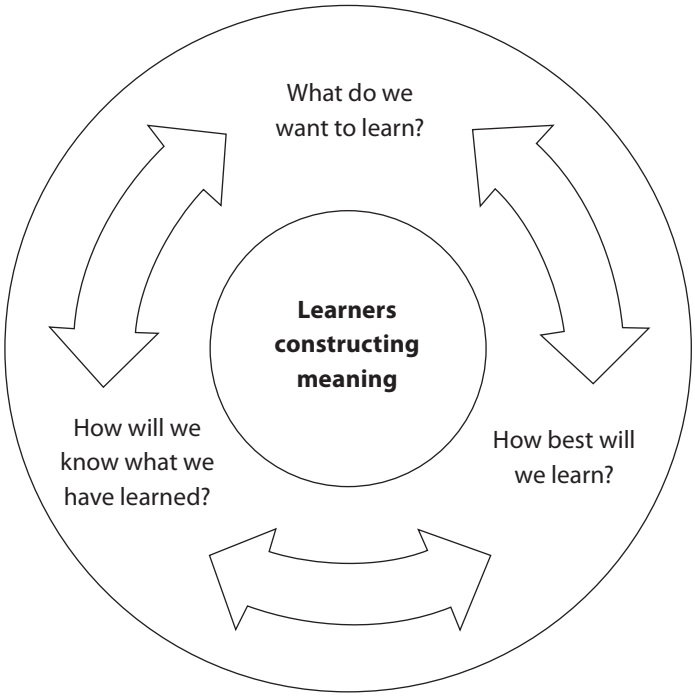


Figure 2

What do we want to learn? The written curriculum

In the PYP a balance is sought between acquisition of essential knowledge and skills, development of conceptual understanding, demonstration of positive attitudes, and taking of responsible action.

In terms of achieving this balance, the five essential elements of the written curriculum are emphasized. They are shown in figure 3.

Essential elements of the written curriculum	
Knowledge	Significant, relevant content that we wish the students to explore and know about, taking into consideration their prior experience and understanding.
Concepts	Powerful ideas that have relevance within the subject areas but also transcend them and that students must explore and re-explore in order to develop a coherent, in-depth understanding.
Skills	Those capabilities that the students need to demonstrate to succeed in a changing, challenging world, which may be disciplinary or transdisciplinary in nature.
Attitudes	Dispositions that are expressions of fundamental values, beliefs and feelings about learning, the environment and people.
Action	Demonstrations of deeper learning in responsible behaviour through responsible action; a manifestation in practice of the other essential elements.

Figure 3

The PYP written curriculum should be planned and used in a developmentally appropriate way; it should take into account what students should learn and be able to do on the basis of what is best for their development in the long term, rather than simply on the basis of what works in the short term. It should be based on each student's needs, interests and competencies. This developmental approach takes into account:

- the characteristics, capabilities and interests that are normal for the age group
- the different rates at which students learn and the wide range of normal variation that can occur in an age group
- that individual patterns of development are complex and not simply sequential
- that learning is a balance between the intellectual, the social and the personal; each is important and each is interlinked with the others
- that the maturity of each student depends on the developmental stages he or she has already gone through, and the effects of earlier positive and negative feedback.

Although the five essential elements are presented under the written curriculum, they resonate throughout the entire PYP curriculum model.

In the sections that follow, each of these elements is explored more fully so that the reader may gain an insight into the importance of each element, how and why it has been selected, and how it will be incorporated into classroom practice.

Knowledge: what do we want students to know about?

Is it possible to identify a particular body of knowledge for PYP schools?

Due to the particular difficulties faced by schools implementing a programme of international education, it is immensely important that the PYP curriculum model includes an outline of a coherent, flexible and interpretive written curriculum that frames a body of knowledge which supports the IB, its mission statement and its learner profile. This decision is driven by the belief that there are areas of knowledge that, while important for any student, are especially **significant** in schools that aim to promote international-mindedness on the part of their students.

The importance of the traditional subject areas is acknowledged: language; mathematics; social studies; science; personal, social and physical education; and the arts; and indeed these are specified as components of the PYP curriculum model. The knowledge, concepts and skills that constitute the essence of each of these subject areas, as reflected in the PYP, can be found in the annex at the back of this document.

In addition, overall expectations for each subject, within each age range, are specified in detailed **scope and sequence** documents. These are available to schools as exemplar material. While some schools may adopt these scope and sequences, other PYP schools may choose to use locally or nationally determined subject-based syllabuses. In the PYP, information and communication technology (ICT) is not identified as a particular subject area, but is recognized as a tool that facilitates learning throughout the curriculum.

However, it is also recognized that educating students in a set of isolated subject areas, while necessary, is not sufficient. Of equal importance is the need to acquire skills in context, and to explore content that is relevant to students, and transcends the boundaries of the traditional subjects. "To be truly educated, a student must also make connections across the disciplines, discover ways to integrate the separate subjects, and ultimately relate what they learn to life" (Boyer 1995). Ernest Boyer proposed that students explore a set of themes that represents shared human experiences such as "response to the aesthetic" and "membership in groups". He referred to these as "core commonalities".

Boyer's work has been seminal to the development of the PYP. Debate and discussion, representing multiple perspectives, about this idea of human commonalities has led to the selection of six transdisciplinary themes (see figure 4) that are considered essential in the context of a programme of international education. These themes:

- have global significance—for all students in all cultures
- offer students the opportunity to explore the commonalities of human experience
- are supported by knowledge, concepts and skills from the traditional subject areas but utilize them in ways that transcend the confines of these subjects, thereby contributing to a transdisciplinary model of teaching and learning
- will be revisited throughout the students' years of schooling, so that the end result is immersion in broad-ranging, in-depth, articulated curriculum content
- contribute to the common ground that unifies the curriculums in all PYP schools.

PYP transdisciplinary themes

Who we are
An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human.

Where we are in place and time
An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.

How we express ourselves
An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.

How the world works
An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.

How we organize ourselves
An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.

Sharing the planet
An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.

Figure 4

Students inquire into, and learn about, these globally significant issues in the context of **units of inquiry**, each of which addresses a **central idea** relevant to a particular transdisciplinary theme. Lines of inquiry are identified in order to explore the scope of the central idea for each unit (see figure 5).

These units collectively constitute the school's **programme of inquiry**, a sample of which is available on the IB online curriculum centre (OCC) at http://occ.ibo.org. The transdisciplinary themes provide a basis for much discussion and interpretation within a school, and allow for both local and global perspectives to be explored in the units. Consequently, it would be inappropriate for the PYP to attempt to produce a definitive programme of inquiry to be used by all schools. In fact, the PYP philosophy and practices have more of an impact on a school's culture when the individuals in the school work collaboratively to develop

a transdisciplinary programme of inquiry designed to meet the school's needs. Schools should explore the possibilities for links between the units taught at each year level, and also across the different age ranges, so that the programme of inquiry is articulated both vertically and horizontally.

Examples of central ideas and corresponding lines of inquiry

Transdisciplinary theme: How we organize ourselves

Title of unit of inquiry: Our school (for 4–5 year olds)

Central idea: Schools are organized to help us learn and play together.

An inquiry into:

- what a school is
- what we do in school
- how our school works
- who works in our school and the jobs they do.

Transdisciplinary theme: How we express ourselves

Title of unit of inquiry: The impact of advertising (for 9–10 year olds)

Central idea: Advertising influences how we think and the choices we make.

An inquiry into:

- the purpose of advertising
- the types, styles and locations of advertisements
- the devices used to make advertising effective and to influence our choices (use of language, images and sounds)
- the connection between advertising and target groups, particularly children.

Transdisciplinary theme: Who we are

Title of unit of inquiry: Learning to live, living to learn (for 11–12 year olds)

Central idea: Learning is a fundamental characteristic of humans that connects them to the world.

An inquiry into:

- what learning is and how we construct meaning
- how the brain functions
- human behaviour and responses to change.

Figure 5

In developing an individual unit of inquiry, organized around a central idea, the following are proposed as useful criteria. Each unit should be:

Engaging	Of interest to the students, and involving them actively in their own learning.
Relevant	Linked to the students' prior knowledge and experience, and current circumstances, and therefore placing learning in a context connected to the lives of the students.
Challenging	Extending the prior knowledge and experience of the students to increase their competencies and understanding.
Significant	Contributing to an understanding of the transdisciplinary nature of the theme, and therefore to an understanding of commonality of human experiences.

It is necessary to achieve a balance between the programme of inquiry and any additional single-subject teaching. Consequently, the planning teams, usually consisting of the teachers at each year level, need to plan the units of inquiry together with the remainder of the curriculum for the year. The relationship between the subject areas and the units of inquiry will change from one unit to another. In teasing out this relationship, it is worth considering the distinctions that Michael Halliday (1980) made about language learning: that students learn language, learn about language, and learn through language. These distinctions are worth reflecting upon for all subject areas.

It would be a useful exercise for each planning team to assess the dynamic relationship between the programme of inquiry and single-subject teaching, from one unit to the other, to ensure the programme of inquiry remains the definitive experience from the students' standpoint (see figure 6).

Organization of time during a unit of inquiry

Transdisciplinary theme: How we organize ourselves

Unit title: The marketplace

Length of unit: 4 weeks

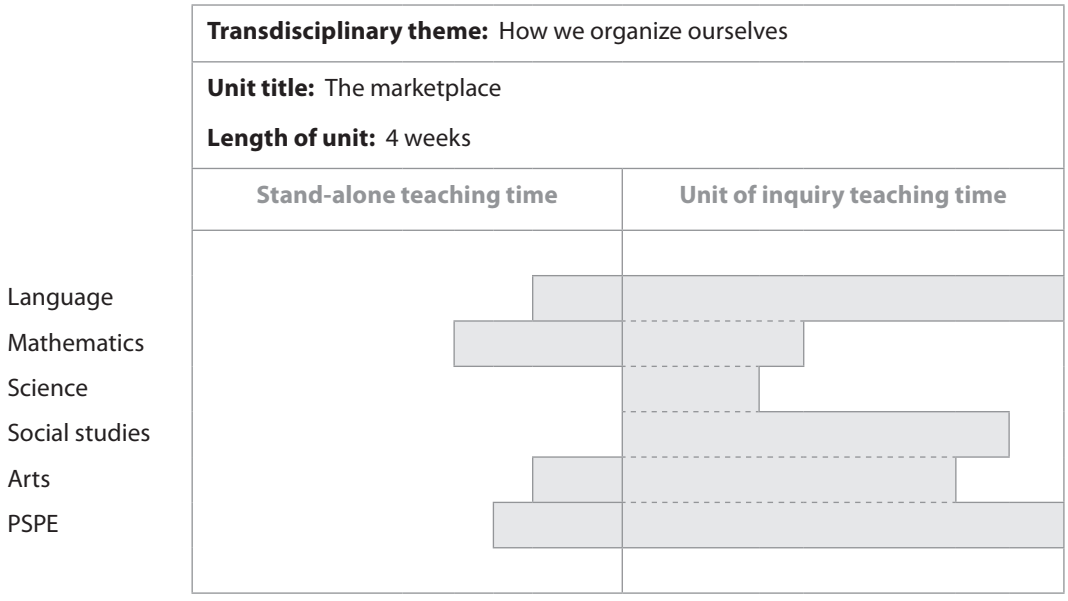


Figure 6

A **whole-school approach** should be taken when developing and refining a programme of inquiry. The proposed units of inquiry for each year level need to be articulated from one year to the other to ensure both horizontal and vertical articulation. This will ensure a robust programme of inquiry that provides students with experiences that are coherent and connected throughout their time in the school.

The intent of this document is to describe as unambiguously as possible what the PYP is; but the opportunity should also be taken to explain what the PYP is not. In this case, it is important to understand that the transdisciplinary programme of inquiry is not merely a novel way of repackaging subject-specific content.

The driving question to be asked each year is "What is really worth knowing that allows students' understanding of the transdisciplinary themes to develop and evolve?" The PYP, because of its commitment to transdisciplinary learning, allows schools to cut down on the amount of subject-specific content they may have been in the habit of delivering. Many PYP schools do not have autonomy in deciding what needs to be covered in the subject areas. That notwithstanding, it is advocated strongly that the principle of "less is more" should apply. The transdisciplinary themes provide the framework for a highly defined, focused, in-depth programme that eliminates redundancy and avoids the pitfalls of a personality-driven curriculum. The collaboration that is required on the part of all the PYP teachers in a school to develop a programme of inquiry means that it will have a resilience above and beyond the talents and resourcefulness of individual teachers in the school.

Concepts: what do we want students to understand?

Why include concepts as an essential element?

Central to the philosophy of the PYP is the principle that purposeful, structured inquiry is a powerful vehicle for learning that promotes meaning and understanding, and challenges students to engage with significant ideas. Hence in the PYP there is also a commitment to a **concept-driven curriculum** as a means of supporting that inquiry.

The decision to structure the PYP curriculum around important concepts is driven by the following beliefs.

- Education for the understanding of significant ideas has often been sacrificed for the memorization of isolated facts and the mastery of skills out of context. The expansion of the curriculum and the pressure to cover the syllabus have resulted in many students leaving school with superficial levels of understanding.
- By starting with the students' prior knowledge, and by confronting and developing their earlier conceptions and constructs, teachers can begin to promote real understanding.
- The exploration and re-exploration of concepts lead students towards an appreciation of ideas that transcend disciplinary boundaries, as well as towards a sense of the essence of each subject area. Students gradually work towards a deepening of their conceptual understanding as they approach those concepts from a range of perspectives.
- Transdisciplinary units, where concepts are used to support and structure the inquiries, provide a context in which students can understand and, at the same time, acquire essential knowledge, skills and attitudes.
- A concept-driven curriculum helps the learner to construct meaning through improved critical thinking and the transfer of knowledge.
- Transdisciplinary concepts increase coherence across the curriculum.

By identifying concepts that have relevance within each subject area, and across and beyond all subject areas, the PYP has defined an essential element for supporting its transdisciplinary model of teaching and learning. These concepts provide a structure for the exploration of significant and authentic content. In the course of this exploration, students deepen their understanding of the concepts.

Is it possible to identify a set of concepts around which to structure a curriculum?

The early developers of the programme analysed curriculum models used in different national systems and in international schools. This analysis focused, firstly, on whether there was a consensus on a set of concepts in which each has universal significance, and secondly, on the role given to concepts in the various curriculum models. The developers concluded that there are clusters of important ideas that can be grouped usefully under a set of overarching or key concepts, each of which has major significance, regardless of time or place, within and across disciplines.

Consequently, the PYP provides a framework for the curriculum, including key concepts as one of the essential elements. It is accepted that these are not, in any sense, the only concepts worth exploring. Taken together, they form a powerful curriculum component that drives the teacher- and/or student-constructed inquiries that lie at the heart of the PYP curriculum.

The key concepts, also expressed as key questions, help teachers and students to consider ways of thinking and learning about the world, and act as a provocation to extend and deepen student inquiries.

Which concepts were chosen and why?

A set of eight concepts was drawn up, each of which, it is felt, is of major importance in the design of a transdisciplinary curriculum. These concepts are:

- form
- function
- causation
- change
- connection
- perspective
- responsibility
- reflection.

Each of these key concepts is presented in figure 7 together with:

A key concept question	The key question that arises from this concept, presented in the form most useful for supporting inquiry. Each key question is presented here in its most basic, generic form, for example, "What is it like?" When working on a unit of inquiry focused on a central idea linked to a particular subject area strand, the question may be more specific, for example, "What is this place like?"
A definition	A generic explanation, provided so that everyone using the curriculum is working with a common understanding of terms.

A rationale	The reasons for the selection of the concept as an important structural component for working with students in an international programme of education.
Examples of related concepts	Some examples of concepts derived from the subject areas that relate to the key concept, provided as a springboard for the generation of further lines of inquiry. The related concepts deepen an understanding of the subject areas while providing further opportunities to make connections throughout the learning, from one subject to another, and between disciplinary and transdisciplinary learning.

In what sense do these concepts drive the curriculum?

The concepts that are central to the curriculum are presented in the form of key questions. It is these questions, used flexibly by teachers and students when planning an inquiry-based unit, that shape that unit, giving it direction and purpose. It is in this sense that the key questions, and the concepts to which they relate, are said to drive the PYP curriculum.

- Since inquiry is a vehicle for learning in the PYP, the natural way to present the key concepts is in the form of broad, open-ended questions.
- Presented in this way, the concepts liberate the thinking of teachers and students, suggesting a range of further questions, each one leading to productive lines of inquiry.
- When viewed as a set of questions, the concepts form a research tool that is both manageable and open-ended. The concepts are not only key in the sense of important; they also provide a key—a way into a body of knowledge through structured and sustained inquiry. They place no limits on breadth of knowledge or on depths of understanding, and therefore provide access to every student, regardless of particular aptitudes.
- These questions should not be interpreted in any restrictive sense as the only questions, to be used in strict order, or to be given equal weight in every inquiry. Rather, they represent an approach, a springboard, an introduction to a way of thinking about teaching and learning. The most relevant key concepts should be identified and documented in every unit of inquiry.

In summary, the PYP concepts underpin student inquiries throughout the planned and unplanned curriculum. It is also recognized that these concepts have different interpretations and applications as students develop and deepen their understanding, in the context of transdisciplinary units, and across each subject area. The concepts, with their generic perceptions, together with the subject-specific perceptions, can be found in the annex at the end of this document.

PYP key concepts and related questions

Form	
Key question	What is it like?
Definition	The understanding that everything has a form with recognizable features that can be observed, identified, described and categorized.
Rationale	This concept was selected because the ability to observe, identify, describe and categorize is fundamental to human learning within and across all disciplines.
Examples of related concepts	Properties, structure, similarities, differences, pattern.

Function	
Key question	How does it work?
Definition	The understanding that everything has a purpose, a role or a way of behaving that can be investigated.
Rationale	This concept was selected because the ability to analyse function, role, behaviour and the ways in which things work is fundamental to learning within and across all disciplines.
Examples of related concepts	Behaviour, communication, pattern, role, systems.

Causation	
Key question	Why is it like it is?
Definition	The understanding that things do not just happen, that there are causal relationships at work, and that actions have consequences.
Rationale	This concept was selected because of the importance of prompting students to ask "Why?" and of helping them to recognize that actions and events have reasons and consequences. The analysis of causal relationships is significant within and across all disciplines.
Examples of related concepts	Consequences, sequences, pattern, impact.

Figure 7

PYP key concepts and related questions

Change	
Key question	How is it changing?
Definition	The understanding that change is the process of movement from one state to another. It is universal and inevitable.
Rationale	This concept was selected, not only because it is such a universal feature of all existence, but also because it has particular relevance to students developing international-mindedness who are growing up in a world in which the pace of change, both local and global, is accelerating.
Examples of related concepts	Adaptation, growth, cycles, sequences, transformation.

Connection	
Key question	How is it connected to other things?
Definition	The understanding that we live in a world of interacting systems in which the actions of any individual element affect others.
Rationale	This concept was selected because of the importance of appreciating that nothing exists in a vacuum but, rather, as an element in a system; that the relationships within and among systems are often complex, and that changes in one aspect of a system will have consequences, even though these may not be immediately apparent; that we must consider the impact of our actions on others, whether at the immediate, personal level or at the level of far-reaching decisions affecting environments and communities.
Examples of related concepts	Systems, relationships, networks, homeostasis, interdependence.

Perspective	
Key question	What are the points of view?
Definition	The understanding that knowledge is moderated by perspectives; different perspectives lead to different interpretations, understandings and findings; perspectives may be individual, group, cultural or disciplinary.
Rationale	This concept was selected because of the compelling need to develop in students the disposition towards rejecting simplistic, biased interpretations, towards seeking and considering the points of view of others, and towards developing defensible interpretations.
Examples of related concepts	Subjectivity, truth, beliefs, opinion, prejudice.

Figure 7 (continued)

PYP key concepts and related questions

Responsibility	
Key question	What is our responsibility?
Definition	The understanding that people make choices based on their understandings, and the actions they take as a result do make a difference.
Rationale	This concept was selected because of the need to develop in students the disposition towards identifying and assuming responsibility, and towards taking socially responsible action. This concept is directly linked to the action component, one of the essential elements in the PYP curriculum.
Examples of related concepts	Rights, citizenship, values, justice, initiative.

Reflection	
Key question	How do we know?
Definition	The understanding that there are different ways of knowing, and that it is important to reflect on our conclusions, to consider our methods of reasoning, and the quality and the reliability of the evidence we have considered.
Rationale	This concept was selected for a series of interrelated reasons. It challenges the students to examine their evidence, methods and conclusions. In doing so, it extends their thinking into the higher order of metacognition, begins to acquaint them with what it means to know in different disciplines, and encourages them to be rigorous in examining evidence for potential bias or other inaccuracy.
Examples of related concepts	Review, interpretation, evidence, responsibility, behaviour.

Figure 7 (continued)

Skills: what do we want students to be able to do?

Why include skills as an essential element?

The search for understanding is central to the beliefs and practices of the PYP. However, the emphasis on the development of conceptual understanding does not preclude a recognition of the importance of developing skills. The construction of meaning and, therefore, of understanding is complemented by the students acquiring and applying a range of skills. These skills are best developed in the context of authentic situations such as those offered through the PYP units of inquiry.

While it is important for all teachers to foster and support the development of skills by providing opportunities embedded in authentic learning experiences, it is particularly relevant for teachers of the younger students to interpret this expectation in ways that are appropriate for their group of learners.

When learning about and through the subject areas, students acquire the particular skills that define the discipline of those subjects. For example, in language the students become literate, and in mathematics they become numerate. The acquisition of literacy and numeracy, in its broadest sense, is essential, as these skills provide students with the tools of inquiry. Nonetheless, the PYP position is that, in order to conduct purposeful inquiry and in order to be well prepared for lifelong learning, students need to master a whole range of skills beyond those normally referred to as basic. These include skills, relevant to all the subject areas and also transcending them, needed to support fully the complexities of the lives of the students.

What transdisciplinary skills does the PYP suggest?

Within their learning throughout the programme, students acquire and apply a set of transdisciplinary skills: social skills, communication skills, thinking skills, research skills and self-management skills (see figure 8). These skills are valuable, not only in the units of inquiry, but also for any teaching and learning that goes on within the classroom, and in life outside the school.

PYP transdisciplinary skills

Thinking skills	
Acquisition of knowledge	Gaining specific facts, ideas, vocabulary; remembering in a similar form.
Comprehension	Grasping meaning from material learned; communicating and interpreting learning.
Application	Making use of previously acquired knowledge in practical or new ways.
Analysis	Taking knowledge or ideas apart; separating into component parts; seeing relationships; finding unique characteristics.
Synthesis	Combining parts to create wholes; creating, designing, developing and innovating.
Evaluation	Making judgments or decisions based on chosen criteria; standards and conditions.
Dialectical thought	Thinking about two or more different points of view at the same time; understanding those points of view; being able to construct an argument for each point of view based on knowledge of the other(s); realizing that other people can also take one's own point of view.
Metacognition	Analysing one's own and others' thought processes; thinking about how one thinks and how one learns.

Figure 8

PYP transdisciplinary skills

Social skills	
Accepting responsibility	Taking on and completing tasks in an appropriate manner; being willing to assume a share of the responsibility.
Respecting others	Listening sensitively to others; making decisions based on fairness and equality; recognizing that others' beliefs, viewpoints, religions and ideas may differ from one's own; stating one's opinion without hurting others.
Cooperating	Working cooperatively in a group; being courteous to others; sharing materials; taking turns.
Resolving conflict	Listening carefully to others; compromising; reacting reasonably to the situation; accepting responsibility appropriately; being fair.
Group decision-making	Listening to others; discussing ideas; asking questions; working towards and obtaining consensus.
Adopting a variety of group roles	Understanding what behaviour is appropriate in a given situation and acting accordingly; being a leader in some circumstances, a follower in others.

Communication skills	
Listening	Listening to directions; listening to others; listening to information.
Speaking	Speaking clearly; giving oral reports to small and large groups; expressing ideas clearly and logically; stating opinions.
Reading	Reading a variety of sources for information and pleasure; comprehending what has been read; making inferences and drawing conclusions.
Writing	Recording information and observations; taking notes and paraphrasing; writing summaries; writing reports; keeping a journal or record.
Viewing	Interpreting and analysing visuals and multimedia; understanding the ways in which images and language interact to convey ideas, values and beliefs; making informed choices about personal viewing experiences.
Presenting	Constructing visuals and multimedia for a range of purposes and audiences; communicating information and ideas through a variety of visual media; using appropriate technology for effective presentation and representation.
Non-verbal communication	Recognizing the meaning of visual and kinesthetic communication; recognizing and creating signs; interpreting and utilizing symbols.

Figure 8 (continued)

PYP transdisciplinary skills

Self-management skills	
Gross motor skills	Exhibiting skills in which groups of large muscles are used and the factor of strength is primary.
Fine motor skills	Exhibiting skills in which precision in delicate muscle systems is required.
Spatial awareness	Displaying a sensitivity to the position of objects in relation to oneself or each other.
Organization	Planning and carrying out activities effectively.
Time management	Using time effectively and appropriately.
Safety	Engaging in personal behaviour that avoids placing oneself or others in danger or at risk.
Healthy lifestyle	Making informed choices to achieve a balance in nutrition, rest, relaxation and exercise; practising appropriate hygiene and self-care.
Codes of behaviour	Knowing and applying appropriate rules or operating procedures of groups of people.
Informed choices	Selecting an appropriate course of action or behaviour based on fact or opinion.

Research skills	
Formulating questions	Identifying something one wants or needs to know and asking compelling and relevant questions that can be researched.
Observing	Using all the senses to notice relevant details.
Planning	Developing a course of action; writing an outline; devising ways of finding out necessary information.
Collecting data	Gathering information from a variety of first- and second-hand sources such as maps, surveys, direct observation, books, films, people, museums and ICT.
Recording data	Describing and recording observations by drawing, note taking, making charts, tallying, writing statements.
Organizing data	Sorting and categorizing information; arranging into understandable forms such as narrative descriptions, tables, timelines, graphs and diagrams.
Interpreting data	Drawing conclusions from relationships and patterns that emerge from organized data.
Presenting research findings	Effectively communicating what has been learned; choosing appropriate media.

Figure 8 (continued)

Attitudes: what do we want students to feel, value and demonstrate?

Why include attitudes as an essential element?

While recognizing the importance of knowledge, concepts and skills, these alone do not make an internationally minded person. It is vital that there is also focus on the development of personal attitudes towards people, towards the environment and towards learning, attitudes that contribute to the well-being of the individual and of the group. By deciding that attitudes (see figure 9) need to be an essential element of the programme, the PYP is making a commitment to a values-laden curriculum.

What attitudes does the PYP suggest that schools should encourage?

PYP attitudes	
In PYP schools, students should demonstrate:	
Appreciation	Appreciating the wonder and beauty of the world and its people.
Commitment	Being committed to their own learning, persevering and showing self-discipline and responsibility.
Confidence	Feeling confident in their ability as learners, having the courage to take risks, applying what they have learned and making appropriate decisions and choices.
Cooperation	Cooperating, collaborating, and leading or following as the situation demands.
Creativity	Being creative and imaginative in their thinking and in their approach to problems and dilemmas.
Curiosity	Being curious about the nature of learning, about the world, its people and cultures.
Empathy	Imagining themselves in another's situation in order to understand his or her reasoning and emotions, so as to be open-minded and reflective about the perspectives of others.
Enthusiasm	Enjoying learning and willingly putting the effort into the process.
Independence	Thinking and acting independently, making their own judgments based on reasoned argument, and being able to defend their judgments.
Integrity	Being honest and demonstrating a considered sense of fairness.
Respect	Respecting themselves, others and the world around them.
Tolerance	Being sensitive about differences and diversity in the world and being responsive to the needs of others.

Figure 9

As the attributes of the IB learner profile are relevant to both students and adults in a PYP school, so too are the PYP attitudes. They need to be interpreted and modelled for students. The purpose of the modelling is not to encourage students to mimic but to provide support—a metacognitive framework—to help students reflect on and develop their own set of values, albeit in the context of that being demonstrated.

The teacher should look for authentic demonstrations of these attitudes in the daily lives of the students in order to raise an awareness of, and build an appreciation for them. The attitudes should not be part of a hidden curriculum but should be part of the vernacular of the PYP classroom, explicitly part of classroom discussions, and reflected in teachers' anecdotal records. They should also be addressed explicitly within the taught and assessed components of the curriculum so that learning experiences and assessment strategies are designed to support and promote the attitudes.

The descriptions of the attitudes are to some degree a reflection of parts of the IB learner profile. Although this congruency is understandable, the attitudes should be considered as "habits of mind" that inform curriculum decisions made across all three components of the PYP curriculum model. Their impact will affect deeply the learning environment and the personal interactions that occur within it.

Action: how do we want students to act?

Why include action as an essential element?

In the PYP, it is believed that education must extend beyond the intellectual to include not only socially responsible attitudes but also thoughtful and appropriate action. An explicit expectation of the PYP is that successful inquiry will lead to responsible action, initiated by the student as a result of the learning process. This action will extend the student's learning, or it may have a wider social impact, and will clearly look different within each age range. PYP schools can and should meet the challenge of offering all learners the opportunity and the power to choose to act; to decide on their actions; and to reflect on these actions in order to make a difference in and to the world (see figure 10).

The problems inherent in advocating action are recognized, particularly the role of the teacher in creating opportunities that will lend themselves to the possibilities of student-initiated action. Action should be seen as a voluntary demonstration of a student's empowerment in the context of the expectations laid down in the programme. Voluntary action must remain precisely this if we truly believe in the values we advocate. Furthermore, we must remember that today's complex issues do not often suggest simple or self-evident solutions, and that inaction is also a legitimate choice; indeed, sometimes, inaction may be the best choice.

In the PYP, it is believed that every student, every year, has the right and should have the opportunity to be involved in such action. This action may be taken by an individual student or by a group of students working collaboratively. In order to make the action component of the curriculum as powerful as possible in terms of student learning, the PYP advocates a cycle of involvement that provides students with opportunities to engage in purposeful and beneficial action.

The action cycle

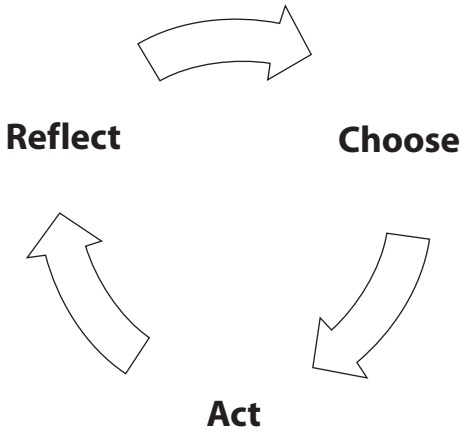


Figure 10

Action as service

The action component of the PYP can involve service in the widest sense of the word: service to fellow students, and to the larger community, both in and outside the school. Through such service, students are able to grow both personally and socially, developing skills such as cooperation, problem solving, conflict resolution, and creative and critical thinking. Moreover, these actions are ways in which the students exhibit their commitment to the attributes of the learner profile and to the attitudes that we seek to engender within the PYP classroom. In fact, the actions that the students choose to take as a result of the learning may be considered the most significant **summative assessment** of the efficacy of the programme.

Is it possible for students to identify appropriate action in which to engage?

In the PYP it is believed that not only is it possible for students to identify appropriate action, but also that teachers have a responsibility to enable them to choose their action carefully, to facilitate this action, and to encourage them to reflect on the action they undertake. This is viewed as an important part of students' active participation in their own learning.

Effective action does not need to be grandiose. On the contrary, it begins at the most immediate and basic level: with the self; within the family; within the classroom, the hallways and the playground. Even very young children can have strong feelings about fairness and justice, and teachers can facilitate positive expressions of these opinions. Effective action can be a demonstration of a sense of responsibility and respect for self, others and the environment.

Guidelines for implementation

Effective action:

- should be modelled by the adults in the school community—the action in which schools may engage will be based on the needs of the school community and the local community
- should be voluntary and involve students in exercising their own initiative
- is best grounded in the students' concrete experiences
- is most beneficial to the students when they are able to witness the outcomes

- usually begins in a small way and arises from genuine concern and commitment
- should include anticipation of consequences, and accepting of responsibility
- may require appropriate adult support in order to facilitate students' efforts and to provide them with alternatives and choices.

The action of fund-raising, either modelled by adults or initiated by students, is common in schools. Although the outcome of the fund-raising is worthy, for students whose participation is limited to the giving of money, it may not require much in the way of personal commitment or reflection. It is intended that the person taking the action will grow from the experience, and that the process of taking action or not will contribute to each student establishing a personal set of values.

Action as a result of the learning may not be witnessed by the teacher and often happens beyond the classroom (see figure 11).

Action beyond the classroom

A parent reports to a teacher that her 4-year-old child has taken action at home, after having been on a school excursion to a recycling station/sewage treatment plant/centre.

Parent On your trip did the children learn about water conservation?

Teacher It was one component of our investigations. Why do you ask?

Parent Because during the weekend I was starting the shower for my son. He ran out of the room and came back with a bucket, and put it in the shower. When I asked him what he was doing, he replied: "I'm catching the water that is not hot enough yet for my shower, so I can save it and give the garden a drink after my shower."

Teacher That's really interesting. He is taking action as a result of what he learned. Please let me know if this continues and if you notice anything else.

Figure 11

How best will we learn? The taught curriculum

What are the connections between the written curriculum and classroom practice—the taught curriculum?

Those learning about the PYP sometimes ask "Is it a curriculum or an approach?" The answer is "both". The PYP curriculum is defined broadly to include an approach to teaching and learning, in recognition of the fact that, in practice, the two are inextricably linked. The taught curriculum is the written curriculum in action.

The PYP developers have set out to strengthen these links by developing a curriculum in which classroom practice, the taught curriculum, is a direct reflection of the written curriculum. Therefore, in the written curriculum the essential elements of learning—knowledge, concepts, skills, attitudes and action—are identified. It is recognized that these elements are not completely separable—in the course of the learning process they blend. It is suggested that they are synthesized in three main ways:

- through the learner profile, which is supported by a curriculum framework based on the five essential elements
- through the exploration of conceptually based central ideas, linked to the transdisciplinary themes, which support and are supported by the other four essential elements
- through the collaborative planning process, which may involve input from students, that considers all three components of the PYP curriculum model—written, taught, assessed—in an iterative manner.

A culture of collaboration is required for the PYP to flourish within a school. This is most clearly reflected in the collaborative planning process that focuses on using the written curriculum to suggest central ideas that are themselves conceptually based. These central ideas may be selected to enhance each student's understanding of issues of global significance, as expressed through the transdisciplinary themes. However, whether teaching goes on within or outside the programme of inquiry, it should be about students' understanding of a central idea, wherever this is possible and reasonable. This defining of a central idea and the structuring of inquiry to support its understanding is one of the characteristics of the PYP planning process, and needs to be engaged with by all teachers in a PYP school. The teaching focuses on facilitating that inquiry in the classroom and beyond.

Why is a commitment to inquiry and the construction of meaning important?

Since its inception, the PYP has been infused with a spirit of inquiry. The ongoing implementation of the PYP is framed by means of questions such as "What do we want the students to understand and be able to do?" In seeking to answer that question, there is a commitment to refining what is significant and relevant, and to quality rather than quantity. It is believed in the PYP that meaning and understanding are undermined by an emphasis on coverage; and that students will become more enduringly skillful when the learning is authentic and in context. The curriculum in a PYP school should emphasize the active construction of meaning so that students' learning will be purposeful.

An extensive study of the literature, when combined with practical experience, has led the PYP to the position it now holds, which is one of commitment to structured, purposeful inquiry that engages students actively in their own learning. In the PYP it is believed that this is the way in which students learn best—that students should be invited to investigate significant issues by formulating their own questions, designing their own inquiries, assessing the various means available to support their inquiries, and proceeding with research, experimentation, observation and analysis that will help them in finding their own responses to the issues. The starting point is students' current understanding, and the goal is the active construction of meaning by building connections between that understanding and new information and experience, derived from the inquiry into new content.

Inquiry, as the leading pedagogical approach of the PYP, is recognized as allowing students to be actively involved in their own learning and to take responsibility for that learning. Inquiry allows each student's understanding of the world to develop in a manner and at a rate that is unique to that student.

It is recognized that there is a role for drill and practice in the classroom. Yet it is felt that teaching to the fullest extent possible about central ideas that are concept based leads to the most substantial and enduring learning.

As discussed earlier, the intention of the PYP is to support students' efforts to construct meaning from the world around them by drawing on their prior knowledge, by providing provocation through new experiences, and by providing time and opportunity for reflection and consolidation. This constructivist approach respects the students' developing ideas and understandings of the social and natural world; it continually stimulates students' revision and refinement of their models of how the world works. It implies a pedagogy that is significantly, but not necessarily completely, dependent on students' inquiry, where the planning incorporates a range of experiences that acknowledges the diversity of students' prior knowledge.

What does inquiry look like?

Inquiry, interpreted in the broadest sense, is the process initiated by the students or the teacher that moves the students from their current level of understanding to a new and deeper level of understanding. This can mean:

- exploring, wondering and questioning
- experimenting and playing with possibilities
- making connections between previous learning and current learning
- making predictions and acting purposefully to see what happens
- collecting data and reporting findings
- clarifying existing ideas and reappraising perceptions of events
- deepening understanding through the application of a concept
- making and testing theories
- researching and seeking information
- taking and defending a position
- solving problems in a variety of ways.

Inquiry involves an active engagement with the environment in an effort to make sense of the world, and consequent reflection on the connections between the experiences encountered and the information gathered. Inquiry involves the synthesis, analysis and manipulation of knowledge, whether through play or through more formally structured learning throughout the PYP.

In the PYP, the lively, animated process of inquiry appears differently within different age ranges. The developmental range evident in a group of 5 year olds can often be from 3 to 8 years. This demands that the teacher be a thoughtful participant in, and monitor of, the ongoing exploration and investigations that the students engage in or initiate. In particular, the teachers of the younger students need to be mindful of the role of the learning environment when presenting provocations to the students, for them to wonder at, and be curious about, and to stimulate purposeful play.

The PYP should be put into practice in developmentally appropriate ways. Practices are developmentally appropriate when the knowledge that may be constructed from them is related to the students' first-hand experience. This does not mean that young students do not acquire knowledge from, for example, stories, books and graphics/visuals. Nevertheless, the extent to which they acquire knowledge is dependent on whether young students can connect the new information to the knowledge they already possess and to the signs and symbols they already understand. It is important to recognize that students' learning may vary from developmental expectations.

Many different forms of inquiry are recognized, based on students' genuine curiosity and on their wanting and needing to know more about the world. It is most successful when students' questions and inquiries are genuine/honest and have real significance in moving them in a substantial way to new levels of knowledge and understanding. The most insightful inquiries, ones most likely to move the students' understanding further, come from existing knowledge. The structure of the learning environments, including the home, the classroom, the school and the community, and the behaviour modelled by others in that environment, particularly by the parent and the teacher, will lay down the knowledge foundation that will nurture meaningful participation and inquiry on the part of the students.

An explicit expectation of the PYP is that successful inquiry will lead to responsible action initiated by the students as a result of the learning process. This action may extend the students' learning, or it may have a wider social impact. Both inquiry and action will clearly look different within each age range and from one age range to the next.

How do we plan for this kind of learning?

Most curriculum guides provide the basis for planning, usually in the form of a list of learning objectives. This list provides a document **from** which to plan. In the PYP, to support teachers who are implementing the programme, the link between the written, the taught and the assessed curriculums has been strengthened. Consequently, in the PYP a document **with** which to plan is provided. This document, the PYP planner (see figure 13), is:

- designed to be used collaboratively
- structured around a central idea and lines of inquiry.

The "bubble" planner (see figure 14), includes stage-by-stage guidelines to inform the use of the planner.

How do we plan for assessment?

In the earliest stages of curriculum planning, good assessment practice requires that teachers ensure the **summative assessment** tasks are linked to the central idea of either the transdisciplinary unit of inquiry or of any teaching outside the programme of inquiry. This summative assessment should provide varied opportunities for the students to show their conceptual understanding. With these central ideas and assessment tasks in mind, activities and resources can be selected.

Teachers should develop ways to assess prior knowledge and skills in order to plan the inquiry. Teachers should also consider ways of assessing students' learning in the context of the lines of inquiry that support the inquiry into the central idea **(formative assessments)**.

Continuous assessment provides insights into students' understanding, knowledge, skills and attitudes. It is also a means of exploring the learning styles and individual differences of the students in order to differentiate instruction.

When planning for assessment, teachers should think like assessors rather than activity designers, clearly setting the criteria that distinguish students' understanding of the central idea or learning objective. The teacher must constantly look for evidence that meets the criteria. Students should be involved whenever possible in the planning of an assessment task.

In planning for assessment, it is important to ask these questions:

- What is the function of the assessment?
- What central idea or learning objectives are being assessed?
- What evidence of the learning will be looked for?
- How can the evidence be collected?
- What experiences are being provided/supported to help the students be successful with the assessment?
- Will the assessment task demonstrate understanding?
- Is the assessment reliable enough to allow sound conclusions to be drawn?
- How will the assessment data be analysed and recorded?
- How and when will feedback be given?

Using the planner

To ensure the coherence of the learning from the students' points of view, it is essential that all teachers in a PYP school see themselves as PYP teachers, and are fully committed to and engaged with the philosophy and practices of the programme. Within each school community, the approach to the implementation of the programme needs to be holistic, not fragmented by disciplinary teaching.

The version of the planner included in this edition of *Making the PYP happen: A curriculum framework for international primary education* has been developed for use by all teachers whose teaching is organized around the exploration of a central idea. This includes the classroom teachers who are usually with their students for most of the time, but also any single-subject teachers who usually spend less time with the students.

The PYP programme of inquiry is defined by the six transdisciplinary themes that are considered worthy of inquiry regardless of the age of the student. These are: *Who we are*, *Where we are in place and time*, *How we express ourselves*, *How the world works*, *How we organize ourselves*, and *Sharing the planet*. Each theme is explored in a unit of inquiry that is planned and documented on a PYP planner.

Six units of inquiry—one for each transdisciplinary theme—should be addressed each year, except in the case of the early years. Exceptionally, the 3–5 year olds are required to complete at least four units of inquiry each year. Two transdisciplinary themes are considered fundamentally relevant to all young students and must be included each year: these are *Who we are* and *How we express ourselves*. Please note that the 5–6 year olds are required to do six units.

Due to the nature of development and learning for the 3–6 year olds, some of the units may be designed to be ongoing throughout the school year. In addition to these, any one unit may be revisited during the year, as shown in figure 12. However, it would not be appropriate to consolidate several units onto one planner; each unit must be documented on a separate planner.

Time allocation for the units of inquiry for 3–6 year olds

The length of the unit, which may be from several weeks (c) to one year (a), is at the discretion of the teacher.

(a) A unit may be developed continually throughout the year.

(b) A unit may be revisited once or on more than one occasion during the year.

(c) A unit may have a discrete beginning and a discrete end, during the course of the year, and last for several weeks.

(d) Another unit may be developed at the same time as an ongoing unit, for example, (a) and (c) or any other combination.

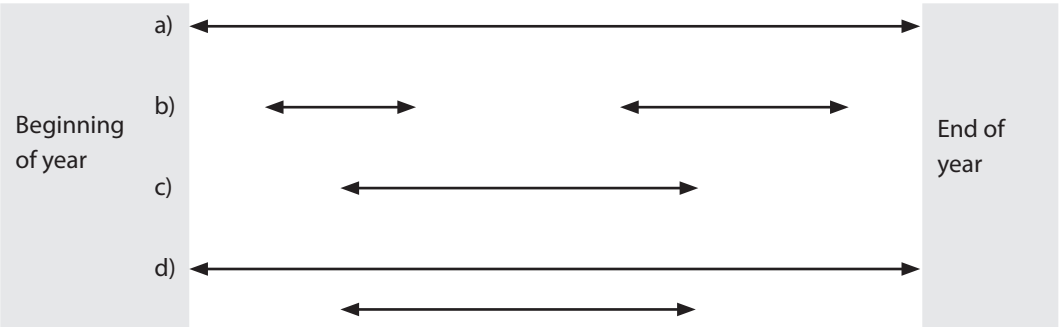


Figure 12

The teacher may exercise considerable freedom in structuring an appropriate time frame for the development of the units. It is important to remember and take into consideration that the responsibility for developing and teaching the units that address the required themes is not only that of the classroom teacher; it should be shared with all appropriate single-subject teachers.

Evaluating a written planner for an inquiry

After the planning process is completed, teachers should reflect on how effective their planning is. Questions to be considered for evaluating the quality of the planning documented on the planner are as follows.

Purpose

- Is the central idea clearly stated?
- Have appropriate connections been made between the central idea and the transdisciplinary theme?
- Do the teacher questions and provocations reflect the purpose?
- Are the teacher questions clear, open-ended and precise?
- Are the lines of inquiry appropriate to the development level and interests of the students?
- Is there a direct link between the concept-based questions and the activities?
- Does the inquiry provide opportunities for:
  - exploring significant knowledge
  - understanding key concepts and related concepts
  - acquiring and applying relevant skills
  - developing responsible attitudes
  - reflection and taking action?
- Do the lines of inquiry and learning experiences promote international-mindedness?

Learning experiences

- Do the learning experiences reflect a variety of appropriate teaching and learning strategies?
- Does the availability and range of resources support inquiry for all students?
- Will the students be actively engaged, and challenged?
- Is there room for student-initiated inquiry?

Assessment

- Does the summative assessment link to the central idea?
- Do the assessment strategies and tools allow for individual differences?
- Are the criteria for success in this inquiry clearly identified for both students and teachers?
- Does the assessment allow the teacher to give feedback to the students and parents?

Good PYP practice

A PYP classroom can only be fully effective in the context of a PYP school. In a PYP school, all constituents are committed to learning and to developing international-mindedness. Adults and students are encouraged to identify problems and seek solutions in the pursuit of continuous improvement towards common goals. A PYP school is infused with a sense of purpose and a spirit of inquiry. Within this setting, each classroom operates as a microcosm of the larger institution.

The classroom is a place of variety and balance. Balance is seen in the attention given both to the pursuit of understanding and to the acquisition of knowledge and essential skills. Variety is there in the range of teaching and assessment strategies and resources used by teachers to meet the needs of each student; and also in the levels of performance the teacher expects to see within the class, and even from one student over time.

Students are actively engaged in planning and assessing their own learning. They are supportive of each other and learning to establish their personal set of beliefs and values. They recognize both their right to an education and their role in achieving that. They are empowered to do their best, for themselves, and in order to contribute to the learning and well-being of others.

A PYP classroom is a lively place, characterized by collaborative and purposeful activity. It is also a reflective place, where thoughtful consideration of issues, problems and successes is valued highly.

Above all, and in summary, a PYP classroom is an intelligent place. It is a place in which the easy option is seldom sought and where the expectations are high. It is an environment in which learning knows no limits.

The role of the adult

The teacher must be familiar with child development and learning, be responsive to the needs and interests of the individual student, and be aware of the cultural and social contexts in which the student lives and learns. The role of the teacher is to facilitate connections between the student's prior knowledge and the knowledge available through new experiences. This is best done with the support of the parents, because it is the student's environment—the home, the school and the community—that will shape the student's cognitive experience.

The teacher needs to provide a secure learning environment in which the individual student is valued and respected, so that the relationships students establish with each other and with adults, which are of central importance to development and learning, will flourish. The student is best served when the relationships between the teacher and the parent, and between the school and the home, are reciprocal and supportive. In a PYP classroom, parents are welcomed as partners, with a clear role to play in supporting the school and their own children. They are informed and involved.

The range of development and learning demonstrated by each member of a group of students will inform which practices the teacher will need to implement to meet the needs of both the group and the individual. The PYP suggests that the teacher's role in this process is to create an educational environment that encourages students to take responsibility, to the greatest possible extent, for their own learning. This means that resources must be provided for each student to become involved in self-initiated inquiry, in a manner appropriate to each student's development and modalities of learning.

The PYP classroom is a dynamic learning environment, with the students moving from group work to individual work in response to their needs and the needs of the inquiries to which they have committed. The students will change roles, working as a leader, a partner, or a member of a larger group.

In the PYP classroom, the teacher facilitates the process of students becoming initiators rather than followers by creating opportunities for and supporting student-initiated inquiries; by asking carefully thought-out, open-ended questions; and by encouraging students to ask questions of each other as well as of the teacher. It goes without saying that the teacher must also value and model inquiry.

Structuring the environment for students

The school environment needs to have a range of clearly defined areas to encourage inquiry, investigation, exploration and play, both in and out of doors. These may include spaces for reading, writing, art, construction, imaginative play and science, with a wide variety of appropriate resources in each. Particularly for young students, interactions in and with these spaces stimulate them to become active learners. They need extended periods of time and as much space as possible to explore, investigate and play with a variety of materials in order to learn about themselves, other people and the world around them. Teachers should structure dynamic learning environments to provide ongoing opportunities for students to develop planned and spontaneous inquiries by:

- making choices and decisions
- using materials in flexible and imaginative ways
- initiating inquiry and asking questions
- working collaboratively with others
- sustaining their interests and extending their knowledge
- developing understanding.

The role of ICT

In the PYP, the ever-increasing impact of information and communication technologies (ICT) on teaching and learning is recognized. It is recommended that all staff be trained to learn how to use any technologies provided for them by the school, and that the use of the available technologies be integrated into student inquiries.

Many students will bring previous experience and knowledge that can be drawn upon to enhance the learning of others, including that of the teacher. In fact, it is in this area that a PYP classroom most often resembles a community of learners.

ICT provides opportunities for the enhancement of learning, and may significantly support students in their inquiries, and in developing their conceptual understanding. It is best considered as a tool for learning, albeit with its own set of skills, as opposed to an additional subject area. ICT skills should be developed and learned in order to support the needs of individual learners in their inquiries.

The use of ICT:

- can document the learning, making it available to all parties
- can provide opportunities for rapid feedback and reflection
- can provide opportunities to enhance authentic learning
- can provide access to a broad range of sources of information
- can provide students with a range of tools to store, organize and present their learning
- encourages and allows for communication with a wide-ranging audience.

A PYP school community should collaboratively identify and agree on the need for, and aims of, the use of ICT. ICT tools should be used critically, with integrity, and there should be specific attention given to the validity and reliability of information gained through their use.

How will we know what we have learned? The assessed curriculum

What is the PYP perspective on assessment?

Assessment is integral to all teaching and learning. It is central to the PYP goal of thoughtfully and effectively guiding students through the five essential elements of learning: the acquisition of knowledge, the understanding of concepts, the mastering of skills, the development of attitudes and the decision to take action. The prime objective of assessment in the PYP is to provide feedback on the learning process. All PYP schools are expected to develop assessment procedures and methods of reporting that reflect the philosophy and objectives of the programme.

Assessment involves the gathering and analysis of information about student performance and is designed to inform practice. It identifies what students know, understand, can do, and feel at different stages in the learning process. Students and teachers should be actively engaged in assessing the students' progress as part of the development of their wider critical-thinking and self-assessment skills.

Teachers need to be mindful of the particular learning outcomes on which they intend to report, prior to selecting or designing the method of assessment. They need to employ techniques for assessing students' work that take into account the diverse, complicated and sophisticated ways that individual students use to understand experience. Additionally, the PYP stresses the importance of both student and teacher self-assessment and reflection.

Everyone concerned with assessment, including students, teachers, parents and administrators, should have a clear understanding of the reason for the assessment, what is being assessed, the criteria for success, and the method by which the assessment is made. The entire school community should also be concerned with evaluating the efficacy of the programme.

Programme **evaluation** contributes to the continuing improvement of the overall programme. Student performance is assessed in accordance with the programme standards and practices, the overall learning outcomes and the subject-specific overall expectations. It also provides information used to inform members of the school community and others of the success of the programme.

The PYP approach to assessment recognizes the importance of assessing the process of inquiry as well as the product(s) of inquiry, and aims to integrate and support both. The teacher is expected to record the detail of inquiries initiated by students in order to look for an increase in the substance and depth of the inquiry. The teacher needs to consider:

- if the nature of students' inquiry develops over time—if they are asking questions of more depth, that are likely to enhance their learning substantially
- if students are becoming aware that real problems require solutions based on the integration of knowledge that spans and connects many areas
- if students are demonstrating mastery of skills
- if students are accumulating a comprehensive knowledge base and can apply their understanding to further their inquiries successfully
- if students are demonstrating both independence and an ability to work collaboratively.

The assessment component in the school's curriculum can itself be subdivided into three closely related areas.

- **Assessing**—how we discover what the students know and have learned.
- **Recording**—how we choose to collect and analyse data.
- **Reporting**—how we choose to communicate information.

Assessing: how do we discover what students have learned?

Student learning is promoted through planning and refining the teaching and learning process to meet individual or group needs. Assessing the students' prior knowledge and experience as well as monitoring their achievement during the teaching period will enable teachers to plan and refine their teaching accordingly. Teachers should bear in mind that a well-designed learning experience will provide data on students' knowledge, skills and conceptual understanding, and is consequently a vehicle for summative or formative assessment.

Summative assessment aims to give teachers and students a clear insight into students' understanding. Summative assessment is the culmination of the teaching and learning process, and gives the students opportunities to demonstrate what has been learned. It can assess several elements simultaneously: it informs and improves student learning and the teaching process; it measures understanding of the central idea, and prompts students towards action.

Formative assessment provides information that is used in order to plan the next stage in learning. It is interwoven with learning, and helps teachers and students to find out what the students already know and can do. Formative assessment and teaching are directly linked and function purposefully together. Formative assessment aims to promote learning by giving regular and frequent feedback. This helps learners to improve knowledge and understanding, to foster enthusiasm for learning, to engage in thoughtful reflection, to develop the capacity for self-assessment, and to recognize the criteria for success. There is evidence that increased use of formative assessment particularly helps those students who are low achievers to make significant improvements in their understanding.

Assessment in the classroom will include:

- using representative examples of students' work or performance to provide information about student learning
- collecting evidence of students' understanding and thinking
- documenting learning processes of groups and individuals
- engaging students in reflecting on their learning
- students assessing work produced by themselves and by others
- developing clear rubrics
- identifying exemplar student work
- keeping records of test/task results.

After any assessment is complete, it is important to ask further questions such as the following.

- Have the tasks provided ample information to allow a judgment to be made about whether the purposes or objectives have been met?
- What does the students' performance reveal about their level of understanding?
- Have any unexpected results occurred?
- What changes should be made in the assessment procedure?
- How should the teaching and learning process be modified as a result of the assessment?

Effective assessments

The following criteria for effective assessments are applicable to both formative and summative assessment.

Effective assessments allow students to:

- share their learning and understanding with others
- demonstrate a range of knowledge, conceptual understanding and skills
- use a variety of learning styles, multiple intelligences and abilities to express their understanding
- know and understand in advance the criteria for producing a quality product or performance
- participate in reflection, self- and peer-assessment
- base their learning on real-life experiences that can lead to further inquiries
- express different points of view and interpretations
- analyse their learning and understand what needs to be improved.

Effective assessments allow teachers to:

- inform every stage of the teaching and learning process
- plan in response to student and teacher inquiries
- develop criteria for producing a quality product or performance
- gather evidence from which sound conclusions can be drawn
- provide evidence that can be effectively reported and understood by the whole school community
- collaboratively review and reflect on student performance and progress
- take into account a variety of learning styles, multiple intelligences and abilities including different cultural contexts
- use scoring that is both **analytical** (separate scores for different aspects of the work) and **holistic** (single scores).

Effective assessments allow parents to:

- see evidence of student learning and development
- develop an understanding of the student's progress
- provide opportunities to support and celebrate student learning.

Further considerations for assessing the learning of young students

The assessment of the development and learning of young students is an essential component of the curriculum, and helps to inform continued development, learning and teaching. Students should be observed in a variety of situations, and a wide range of assessment strategies should be implemented. The teacher observes the young student in order to:

- build up a clear picture of the student and his or her interests
- identify what and how the student is thinking and learning
- assess the effectiveness of the environment on the student's learning
- extend the student's learning.

When observing, the teacher should record what the students say. By listening carefully to the dialogue between students, especially in dramatic play, the teacher can learn about their current interests, knowledge base, level of involvement and social skills. The teacher should share these observations with the students, with colleagues and with parents to know better the inner world of the student, analyse the interactions within a group, discover the student's strengths and difficulties, and reflect on the effectiveness of the practices used to implement the programme of inquiry and other classroom experiences.

It is important to identify the needs of each student and to view learning as a continuum, with each student achieving developmental milestones in different but relevant ways. Through listening and observing, areas of learning that the students particularly enjoy can be identified, and stimulating experiences can be planned to consolidate or extend the learning further.

Recording: how do we collect and analyse the data?

Assessment strategies and tools form the basis of a comprehensive approach to assessment and represent the school's answer to the question "How will we know what we have learned?"

The strategies are the methods or approaches that teachers use when gathering information about a student's learning. Teachers record this information using a variety of tools, which are the instruments used to collect data.

When choosing appropriate strategies, it is important to take into consideration which tools are most applicable and relevant to that strategy. This helps to ensure that an effective assessment of the learning experience takes place. A variety of strategies and tools should be used (see figure 15).

Assessment strategies and tools					
Assessment tools / Assessment strategies	Rubrics	Exemplars	Checklists	Anecdotal records	Continuums
Observations	✓		✓	✓	✓
Performance assessments	✓	✓		✓	✓
Process-focused assessments	✓		✓	✓	✓
Selected responses		✓	✓		✓
Open-ended tasks	✓	✓		✓	✓

Figure 15

Strategies

The strategies in figure 16 have been identified as central to the assessment process. They cover a broad range of approaches, from the more subjective and intuitive to the more objective and scientific. It is essential that they be seen as a package since they have been selected in order to provide a range of approaches and therefore to provide a balanced view of the student.

Assessment strategies	
Observations	All students are observed often and regularly, with the teacher taking a focus varying from wide angle (for example, focusing on the whole class) to close up (for example, focusing on one student or one activity), and from non-participant (observing from without) to participant (observing from within).
Performance assessments	The assessment of goal-directed tasks with established criteria. They provide authentic and significant challenges and problems. In these tasks, there are numerous approaches to the problem and rarely only one correct response. They are usually multimodal and require the use of many skills. Audio, video and narrative records are often useful for this kind of assessment.

Figure 16

Assessment strategies	
Process-focused assessments	Students are observed often and regularly, and the observations are recorded by noting the typical as well as non-typical behaviours, collecting multiple observations to enhance reliability, and synthesizing evidence from different contexts to increase validity. A system of note taking and record keeping is created that minimizes writing and recording time. Checklists, inventories and narrative descriptions (such as learning logs) are common methods of collecting observations.
Selected responses	Single occasion, one-dimensional exercises. Tests and quizzes are the most familiar examples of this form of assessment.
Open-ended tasks	Situations in which students are presented with a stimulus and asked to communicate an original response. The answer might be a brief written answer, a drawing, a diagram or a solution. The work, with the assessment criteria attached, could be included in a portfolio.

Figure 16 (continued)

Tools

The assessment strategies listed in figure 16 may be put into practice using the assessment tools in figure 17.

Assessment tools	
Rubrics	An established set of criteria for rating students in all areas. The descriptors tell the assessor what characteristics or signs to look for in students' work and then how to rate that work on a predetermined scale. Rubrics can be developed by students as well as by teachers.
Exemplars	Samples of students' work that serve as concrete standards against which other samples are judged. Generally there is one benchmark for each achievement level in a scoring rubric. Each school is encouraged to set benchmarks that are appropriate and usable within their particular school context.
Checklists	These are lists of information, data, attributes or elements that should be present. A mark scheme is a type of checklist.
Anecdotal records	Anecdotal records are brief written notes based on observations of students. "Learning stories" are focused, extended observations that can be analysed later. These records need to be systematically compiled and organized.
Continuums	These are visual representations of developmental stages of learning. They show a progression of achievement or identify where a student is in a process.

Figure 17

These assessment tools may be used in conjunction with other forms of assessment, such as standardized tests, in order to assess both student performance and the efficacy of the programme.

The IB position on standardized achievement tests

While the IB does not administer or encourage the use of standardized achievement tests, it recognizes that there may be a local, state or national requirement concerning the use of such tests for many IB World Schools. Some other IB World Schools, not subject to these requirements, do choose to use commercially available tests in order to measure their students' performance over time, in areas defined by the test but not directly linked to the learning defined in the academic programme. When standardized achievement tests are an option, administrators and teachers should carefully consider:

- the relevance of the test to the cohort of students within the school
- the relationship between what is being tested and the school's programme
- the impact of testing on teaching and learning
- the usability of the data produced.

Documentation

The documentation of the evidence of student learning is an assessment strategy relevant to all students throughout the PYP, but may be particularly significant in the early years (3–5 years). Teachers use a range of methods to document student learning as a means of assessing student understanding. This may include, but is not limited to, videos, audio, photographs and graphic representations.

Teachers may also use written records of student conversations, comments, explanations and hypotheses as well as annotated pieces of student work that may form part of a student's portfolio.

Portfolios

Schools have a responsibility to show evidence of student learning. As an example, portfolios are one method of collecting and storing information that can be used to document and assess student progress and achievement.

A portfolio is a record of students' involvement in learning which is designed to demonstrate success, growth, higher-order thinking, creativity, assessment strategies and reflection. A portfolio is a celebration of an active mind at work. It provides a picture of each student's progress and development over a period of time both as individual and group learners. It enables students to reflect with teachers, parents and peers in order to identify their strengths and growth as well as areas for improvement, and then to set individual goals and establish teaching and learning plans.

Evidence of learning in a portfolio should be from a range of experiences and curriculum areas. The portfolio is used to show the development of knowledge, conceptual understanding, transdisciplinary skills, attitudes and the attributes of the learner profile over a period of time. It may also be used to document student action. Portfolio entries should document both the process of learning and the product, including images and evidence of students in the process of constructing meaning. It can be used as a tool for assessment and reporting purposes for students, parents, teachers and administrators.

How does it work?

Schools using portfolios will need to develop agreements for their use. Things to consider are:

- the criteria for selecting pieces of work
- who will select the pieces of work
- what will accompany the selected pieces of work (for example, self-assessment, reflections, assessment tools, teacher comments)
- how to establish what is to be included and what will be removed

- when and how portfolios are to be used (for reporting purposes, student-led conferences, parent–teacher interviews, report writing)
- the format the portfolios will take (for example, electronic, binder, folder)
- where the portfolios will be housed
- who has access to the portfolios
- who the portfolio ultimately belongs to
- how the portfolios will move with the students.

Reporting: how do we choose to communicate information about assessment?

Reporting on assessment is about communicating what students know, understand and can do. It describes the progress of the students' learning, identifies areas for growth, and contributes to the efficacy of the programme. Assessment without feedback is merely judgment; feedback is the component of assessment that lets us interpret the judgment and improve our work. Reporting is perhaps the most public aspect of a school's assessment policy, and as such needs careful consideration in order to provide clear information that is useful to students and parents. Reporting may take many forms including conferences and written reports.

Effective reporting should:

- involve parents, students and teachers as partners
- reflect what the school community values
- be comprehensive, honest, fair and credible
- be clear and understandable to all parties
- allow teachers to incorporate what they learn during the reporting process into their future teaching and assessment practice.

Schools are required to report on each student's development according to the attributes of the learner profile. However, this feedback does not need to be included on a report card, and teachers do not need to report on each attribute at the end of every reporting period. It is not appropriate to grade or score the attributes of the learner profile.

Opportunities should be provided for students to consider their progress in relation to the attributes listed in the IB learner profile in the context of student learning. Observations and anecdotal records of their own performance could be included in each student's portfolio of selected work. The student could also contribute to reporting to parents, through the report card and/or student-led conferences.

The issue is that the parents need to know about the learner profile and that the school community attaches the utmost importance to it, such that it influences the valued practices and cultural norms within the school. This is also an example of the process being more important than the product, and of the student's role in the process being strengthened and made clear.

Conferences

The purpose of conferences is to share information between teachers, students and parents. A school should determine the function of conferences in order to develop their structure, and this might include goal setting. These conferences may take a formal or informal structure.

The following structures may be used.

Teacher–student

These are designed to give students feedback so they can reflect on their work and further refine and develop their skills. It is important that these individual conferences occur frequently in order to support and encourage the student's learning and teacher planning.

Teacher–parent(s)

These are designed to give the parents information about the student's progress development and needs, and about the school's programme. Teachers should take this opportunity to gather background information, to answer the parents' questions, to address their concerns, and to help define their role in the learning process. The parents should take the opportunity to provide the teacher with the cultural context of the student's learning.

Student-led

Student-led conferences involve the student and the parent. The students are responsible for leading the conference, and also take responsibility for their learning by sharing the process with their parents. It may involve students demonstrating their understanding through a variety of different learning situations. There may be several conferences taking place simultaneously.

The conference will involve the students discussing and reflecting upon samples of work that they have previously chosen to share with their parents. These samples have been previously selected with guidance and support from the teacher, and could be from the student's portfolio. The student identifies strengths and areas for improvement. It enables parents to gain a clear insight into the kind of work their child is doing and offers an opportunity for them to discuss it with their child. The conferences must be carefully prepared, and time must be set aside for the students to practise their presentations. The format of this conference will depend on the age of the student and all of the participants must understand the format and their roles prior to the conference.

Three-way

Three-way conferences involve the student, parents and teacher. Students discuss their learning and understanding with their parents and teacher, who are responsible for supporting the student through this process. Students are responsible for reflecting upon work samples they have chosen to share, that have been previously selected with guidance and support from the teacher and could be from the student's portfolio. The student, parents and the teacher collaborate to establish and identify the student's strengths and areas for improvement. This may lead to the setting of new goals, with all determining how they can support the achievement of the goals. The teacher is an integral part of the process and takes notes of the discussion. These notes may then be used in the written report. All of the participants must understand the format and their roles prior to the conference.

The written report

Written reports are seen as a summative record for students, parents and the school itself of a student's progress. Nonetheless, the formative potential of an effective reporting procedure should not be overlooked. Reports that clearly indicate areas of strengths, areas for improvement, and where students are involved in providing input (through self-assessment), are helpful aids to a student's development.

The reporting system and procedures of a PYP school should reinforce the underlying values of the programme. Many schools will be subject to local requirements that include standardized reports or formats that may not reflect PYP objectives and assessment criteria. In such cases, schools are expected to devise additional forms of reporting that take into account the assessment model of the PYP and provide a clear indication of the student's progress with reference to the learner profile.

There are no specific formats preferred by the IB for reports, but the following points may prove useful in formulating a reporting system.

1. The learner profile is addressed.
2. The transdisciplinary units and the subject-specific teaching are included.
3. All teachers involved in the student's progress have an opportunity to comment.
4. All the essential elements of the programme are included.

Examples of schools' report card templates can be found on the OCC.

The exhibition

In the final year of the PYP, students participate in a culminating project, the PYP exhibition. This requires that each student demonstrates engagement with the five essential elements of the programme: knowledge, concepts, skills, attitudes and action. It is a transdisciplinary inquiry conducted in the spirit of personal and shared responsibility, as well as a summative assessment activity that is a celebration as students move from the PYP into the middle years of schooling. For further information and guidance on the exhibition, refer to *PYP exhibition guidelines* (2004).

The exhibition represents a significant event in the life of a PYP school and student, synthesizing the essential elements of the PYP, and sharing them with the whole school community. It is an opportunity for students to exhibit the attributes of the learner profile that have been developing throughout their engagement with the PYP.

In the students' final year of the PYP, which occurs in some schools at 10–11 years old and in others at 11–12 years old, there are five units of inquiry and the exhibition. The exhibition unit takes place under any transdisciplinary theme at the discretion of the school. Students are required to engage in a collaborative, transdisciplinary inquiry process that involves them in identifying, investigating and offering solutions to real-life issues or problems. The central idea selected must be of sufficient scope and significance to warrant a detailed investigation by all students.

The PYP exhibition has a number of key purposes including the following.

- For students to engage in an in-depth, collaborative inquiry
- To provide students with an opportunity to demonstrate independence and responsibility for their own learning
- To provide students with an opportunity to explore multiple perspectives
- For students to synthesize and apply their learning of previous years, and to reflect on their journey through the PYP
- To provide an authentic process for assessing student understanding
- To demonstrate how students can take action as a result of their learning
- To unite the students, teachers, parents and other members of the school community in a collaborative experience that incorporates the essential elements of the PYP
- To celebrate the transition of learners from primary to middle/secondary education

As the culminating PYP experience, it is required that the exhibition reflects all the major features of the programme. Therefore, it must include regular and carefully planned assessment.

This assessment should take two forms: firstly, ongoing assessment of each individual student's contribution to and understanding of the exhibition; secondly, a summative assessment and reflection on the event itself.

Assessment of the exhibition takes place within the school. It should take place throughout the whole process of the exhibition and should be rigorous. The IB seeks to ensure the integrity of the PYP without formally monitoring internal assessment or conducting external examinations. Schools may find it helpful to refer to the exhibition rubric in the *PYP exhibition guidelines* (2004), which is based on standard D2 of the IB *Programme standards and practices* (2005), as a guide to assessing their exhibition.

Teachers will find samples of how schools have engaged in the exhibition, together with further guidance for the exhibition, on the OCC.

A school's assessment policy

> There is a written assessment policy in place that is available to all sections of the school community.
>
> *Programme standards and practices:* C4.1, IB (2005)

An assessment policy reflects the school's philosophy and position on assessment. Developing an assessment policy is often the catalyst for schools to focus on their philosophy for assessment and to achieve a common understanding of their aims and objectives.

An assessment policy is a written document that aims to clarify teachers' understanding of the whole assessment process within their school setting. It is not a static document but one that is constantly evolving to reflect the assessment needs of the school. Collaborative reflection is a key component of developing an assessment policy, and must involve both teaching staff and administrators.

Once an assessment policy has been developed and agreed upon, it will apply across the whole school. A clear assessment policy needs to be established in the school and communicated to students and parents. It will include the following.

- Purpose for assessment (What and why do we assess?)
- Principles of assessment (What are the characteristics of effective assessments?)
- Assessment practice (How do we assess?)

When creating an assessment policy, schools need to keep in mind the overall value of the collaborative process that the school community will go through. The most important thing is the collaboration that must take place within a school in order to create an assessment policy. Although producing a written document is the intended outcome, it is the collaborative nature of the process and the associated discussions that are of most value. By involving those with a vested interest, the assessment policy then truly reflects the school's philosophy. A system should also be put in place to allow regular reviews of the assessment policy.

The following questions can be used to assist a school to establish an assessment policy.

- What is the school's philosophy of assessment?
- How is the school's philosophy of assessment aligned to its mission statement?
- What practices will be agreed upon in order to fulfill this philosophy?
- What are the purposes of assessment for all the components of the school community (students, teachers, parents, administrators)?

Schools will find it helpful to develop agreed assessment practices as a part of their assessment policy. These are practices that are put into place within the school that address how the school assesses, records and reports student progress.

The following questions can be used to help a school establish agreements on assessment.

- How should we structure assessment?
- How often should we assess?
- What do we assess?
- Who is responsible for assessment and how?
- How should assessment information be recorded?
- How should assessment information be analysed and reported?
- How will assessment information be reported to students and parents?
- Who will have access to assessment information and where will it be located?
- How often will we review our assessment practices?
- Are there any mandatory requirements that must be satisfied?