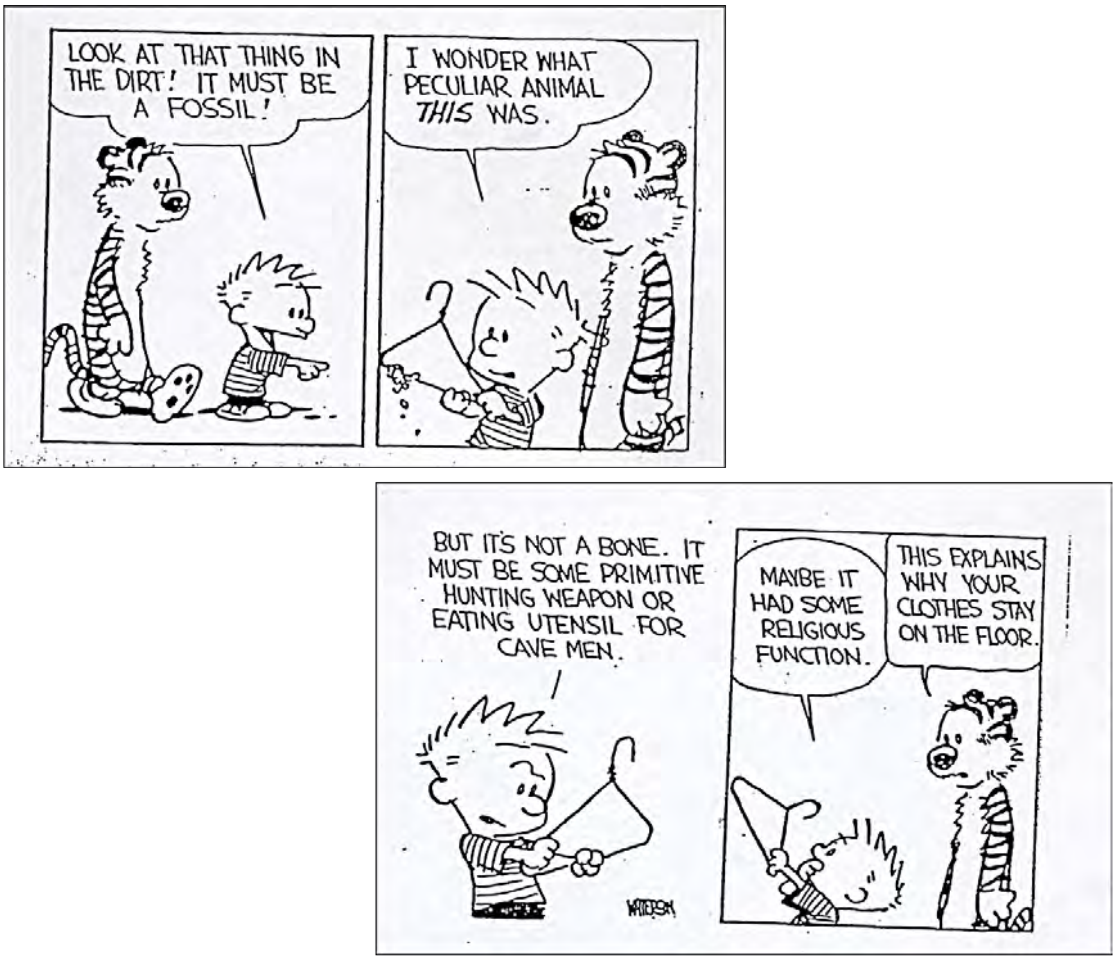


Cartoon by **Calvin and Hobbes**

"As it is, the lover of inquiry must follow his beloved wherever it may lead him." — Plato, Euthyphro

International Baccalaureate, Primary Years Programme

INQUIRY in the PYP

Workshop Leader:
Annabelle Villamarin

SPECIAL THANKS

This booklet contains articles from IB publications, OCC, Workshop Leaders Training Workshop (IBAP), selected articles from IBAP Trainers who have previously run this particular workshop.

Special acknowledgement and thanks to:

FRANKLYN HEISLER
ALEXANDRA SILITONGA
IB WORKSHOP LEADERS

MIGNON WECKERT
FORMER PYP REGIONAL MANAGER

TANIA LATTANZIO
FORMER PYP ASSOCIATE REGIONAL MANAGER

I am most grateful to these wonderful educators for their assistance in helping me create this booklet and the workshop programme.

Annabelle Villamarin

Agenda

Please note: session topics are subject to change based on needs of the group

TIME/DAY	DAY 1	DAY 2	DAY 3
8:30 – 10:00	**Introductions** • Regional Workshop **Session 1:** ▪ Establishing purpose ▪ Exploring beliefs and experiences ▪ Building a culture of learning ▪ Beginning a continuum of learning	**Session 5:** **Inquiry Models** ▪ Models available for teachers ▪ Lesson planning **Classroom environment and how it supports inquiry**	**Session 9:** **Written Curriculum** ▪ Programme of inquiry ▪ PYP planning practices
10:00 – 10:30	**Morning Break**		
10:30 – 12:00	**Session 2:** **Defining Inquiry** ▪ What does inquiry mean? ▪ Using available resources to help define inquiry ▪ Purpose of inquiry learning	**Session 6:** **Problem-Based learning** ▪ Hands-on inquiry ▪ Summative assessment and inquiry	**Session 10:** **Standards and Practices** ▪ Reflecting on our practices ▪ Building school plan
12:00 – 1:00	**Lunch**		
1:00 – 2:30	**Session 3:** **Constructivism** ▪ How concepts drive inquiry ▪ PYP as a concept-driven curriculum	**Session 7:** **Application** ▪ Inquiry journeys ▪ Inquiry and the environment	**Session 11:** **Summative Assessment** ▪ Recap of three days ▪ Personal reflections
2:30 – 3:00	**Afternoon Break**		
3:00 – 4:00	**Session 4:** **Inquiry approaches** ▪ Sensory or object-based inquiry ▪ Art of questioning ▪ Reflecting on our lines of inquiry	**Session 8:** **Application (cont'd)** ▪ Inquiry journeys ▪ Inquiry and the environment	**Session 12:** **Personal Action Plan** ▪ Summative assessment of the workshop ▪ Reflection ▪ Going Further
4:30	**End of the Day**		

*An official "IB Certificate of Attendance" is awarded to participants who have attended all sessions of a workshop. Please ensure that travel arrangements do not preclude candidacy for a certificate.

Objectives

This workshop will develop these understandings:

- ☐ Inquiry begins with students' knowledge and curiosity upon which they construct meaning and build connections
- ☐ In inquiry, students are actively involved and take responsibility for their learning in an authentic context
- ☐ Inquiry is true differentiation. It allows all students to understand the world in a way that is unique to them
- ☐ Inquiry is not only questions; it is a process that involves provocation, reflection and consolidation
- ☐ The inquiry process analyses, synthesizes and manipulates knowledge; it can be developed through play and more structured learning
- ☐ Successful inquiry will lead to responsible action initiated by students
- ☐ Inquiry is a shared process, a collaborative interplay between students, teachers and the environment
- ☐ Inquiry addresses the scope and sequence standards through concept based units structured around central ideas and lines of inquiry
- ☐ Successful inquiry requires pre-assessment, continual formative assessment and a summative task(s) that allows students to demonstrate their conceptual understanding of the central idea
- ☐ Inquiry is addressed in many other IB workshops and professional development opportunities including but not limited to: Concept-based Learning, Transdisciplinary Learning, the Written Curriculum and Pedagogical Leadership.

THE INTERNATIONAL BACCALAUREATE

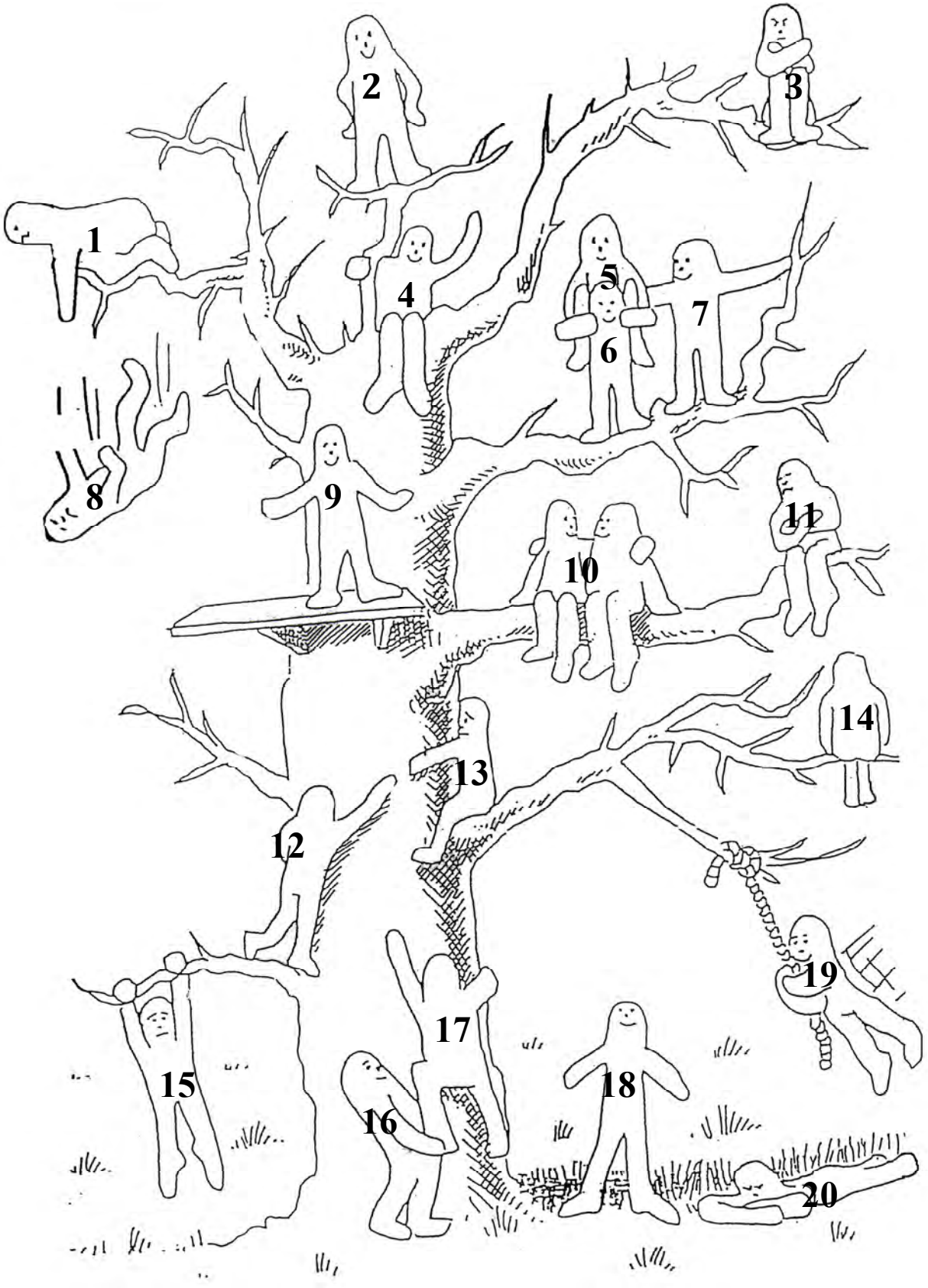
aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

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

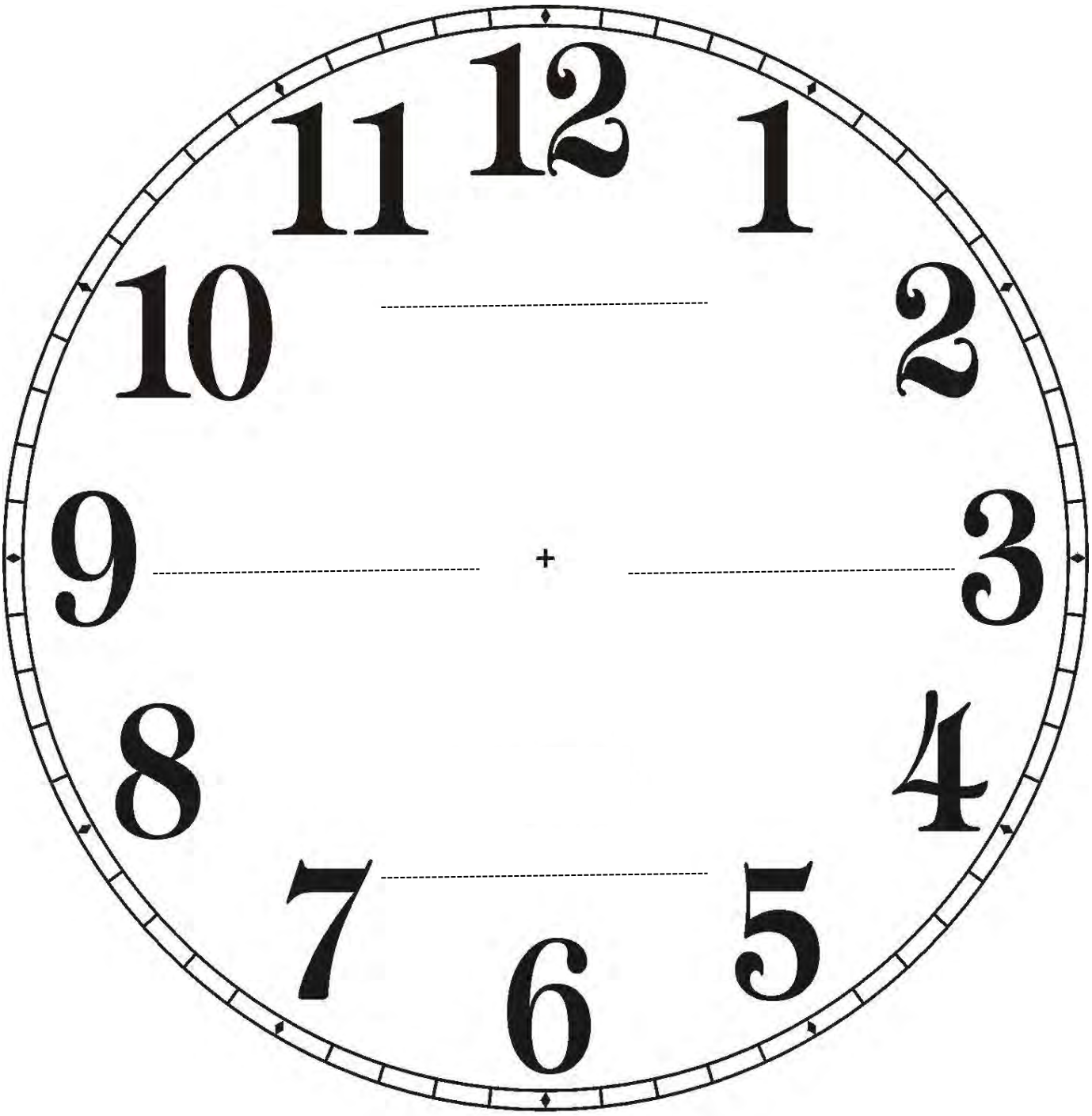
These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

IB Mission Statement

People Tree



Clock Appointment



Tiffany Lt BT (Demi)

FIGURE 2.3. The Structure of Knowledge

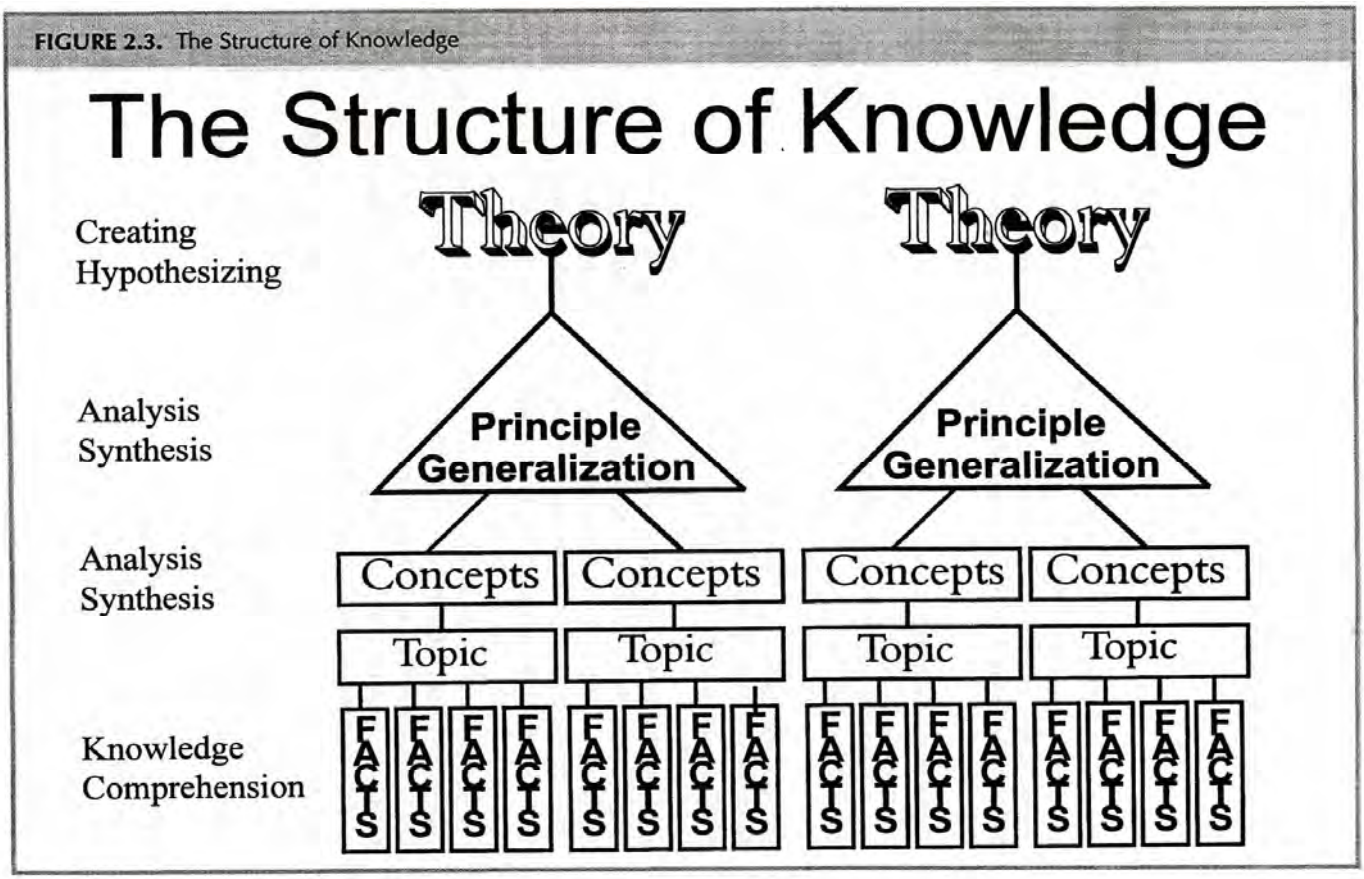


FIGURE 2.6. Superman/Concepts

SOURCE: Cartoon by David Ford. *david@twocrowcartoons.com*

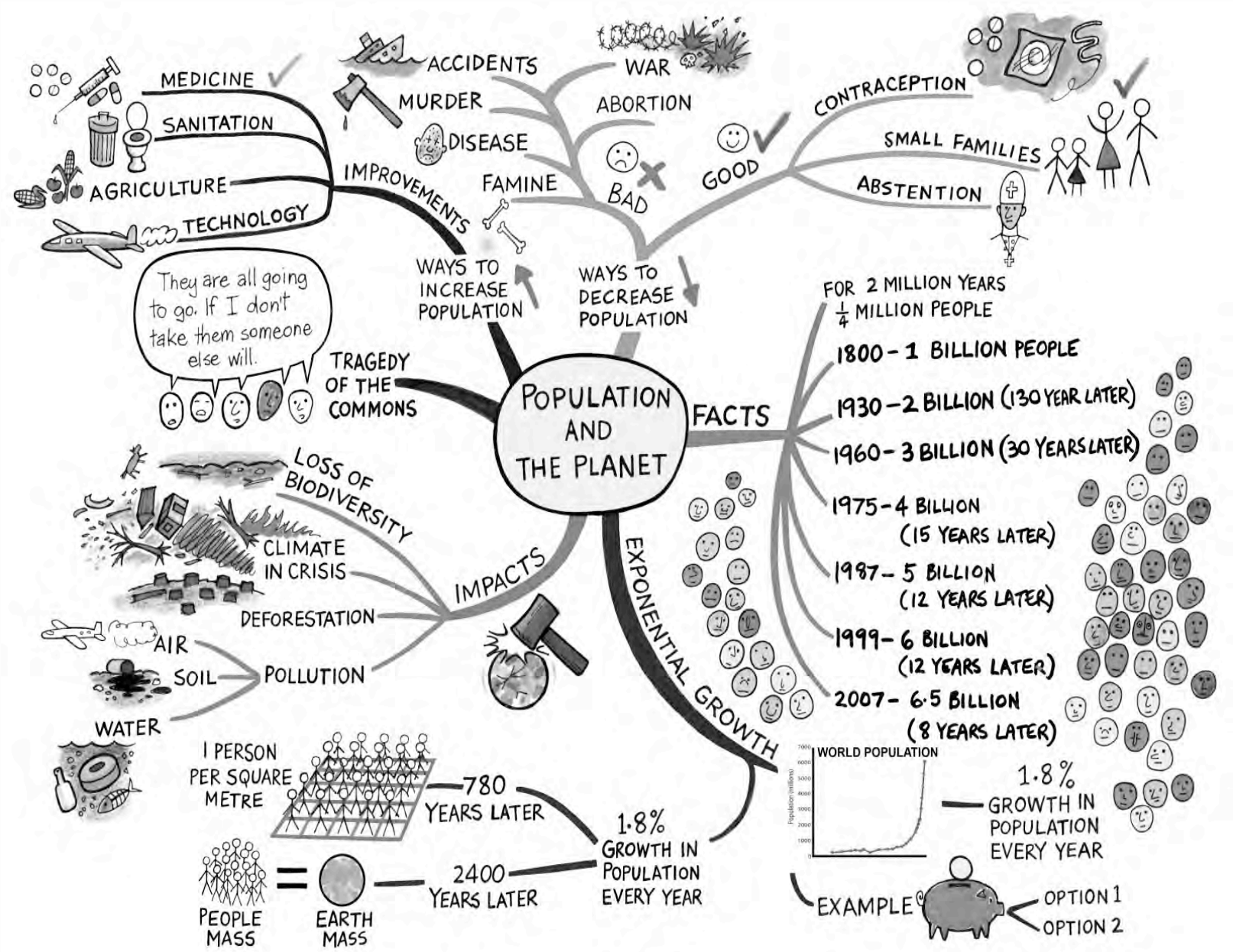
Mindmaps

How to draw a Mindmap:

1. Imagine your brain-cells are like trees, with each one storing related information on its branches.
2. Now try arranging the key points of any topic on a sheet of white paper in the same tree-like format.
3. Start with the central topic – preferably with a symbol – in the centre of the page, then draw branches spreading out from it. If you're mindmapping inquiry, use a question mark as the centre, if Ancient Egypt a pyramid.
4. Generally record only one word and/or symbol for each point you want to recall – one main theme to each branch. Use single words or simple phrases. Print words. If a symbol means more to you than a word, use it.
5. Put related points on the same main branches, each one shooting off like a new sub branch.
6. Use different coloured pencils or markers for related topics, ie to separate different ideas. Colour can help to show organization.
7. When you've completed each branch, enclose it in a different coloured border.
8. Use arrows to show relationships such as cause and effect.
9. Add to each map regularly. In this way it's smart to start with the overview and then build up your Mindmap as you learn more key points about each subject.

Source: Dryden G & Vos, J – The Learning Revolution, 1997

Mindmap 1


POPULATION AND THE PLANET
IMPROVEMENTS
MEDICINE
SANITATION
AGRICULTURE
TECHNOLOGY
WAYS TO INCREASE POPULATION
ACCIDENTS
MURDER
DISEASE
FAMINE
WAR
ABORTION
BAD
WAYS TO DECREASE POPULATION
GOOD
CONTRACEPTION
SMALL FAMILIES
ABSTENTION
They are all going to go. If I don't take them someone else will.
TRAGEDY OF THE COMMONS
FACTS
FOR 2 MILLION YEARS ¼ MILLION PEOPLE
1800 – 1 BILLION PEOPLE
1930 – 2 BILLION (130 YEAR LATER)
1960 – 3 BILLION (30 YEARS LATER)
1975 – 4 BILLION (15 YEARS LATER)
1987 – 5 BILLION (12 YEARS LATER)
1999 – 6 BILLION (12 YEARS LATER)
2007 – 6·5 BILLION (8 YEARS LATER)
IMPACTS
LOSS OF BIODIVERSITY
CLIMATE IN CRISIS
DEFORESTATION
POLLUTION
AIR
SOIL
WATER
EXPONENTIAL GROWTH
1 PERSON PER SQUARE METRE
780 YEARS LATER
1·8% GROWTH IN POPULATION EVERY YEAR
PEOPLE MASS
EARTH MASS
2400 YEARS LATER
WORLD POPULATION
1·8% GROWTH IN POPULATION EVERY YEAR
EXAMPLE
OPTION 1
OPTION 2

Questions to Promote Reflective Thinking

Examples of Possible Questions before an activity:

1. What do you already know?
2. What would you like to know?
3. What questions do you have from the _____ lesson?
4. What have you learned from the _____ lesson?
5. What do you think we are going to do this activity/lesson?
6. What do you expect you will learn from this lesson/session?
7. How do you feel?

Examples of Possible Questions during an activity:

1. What do you know now?
2. Can you connect this to something else?
3. What do you want to know more about?
4. Is this easy or hard for you? Why?
5. What questions do you still have?
6. How can I help you now?
7. What still puzzles you?
8. How can you group what you now know?
9. What has helped you? How?
10. How do you now feel?
11. What could be better to help you learn?
12. What do you think about _____now?
13. If you were the teacher what would you do next?

Examples of Possible Questions after a session:

1. What has surprised you?
2. What helped you learn? How? Who helped you learn? How?
3. What would you do differently next time?
4. What could I have done to help you more? What did I do to help you learn?
5. What can you do better now? How do you now feel?
6. What do you think the purpose of this activity was?
7. What was the purpose of the activity/session?
8. What questions do you still have? What do you still not understand?
9. How would you explain to another person what we have just done?
10. What do you still want to know? What problems do you still have?
11. How could you use what you have just learned?
12. If you were the teacher what would you do/plan now?
13. What would you do to help yourself learn?
14. How will you use/remember what you have just learned?
15. Why do you think you needed to learn this?
16. How will you be able to use what you have learnt?

Examples of possible questions for group reflection:

1. How did your group work together? Why?
2. How did you help your group?
3. How did the members of the group help you?
4. What could your group have done better?
5. Why do you think group work was chosen for this activity?
6. If you were to work together again what would be done differently? Why?

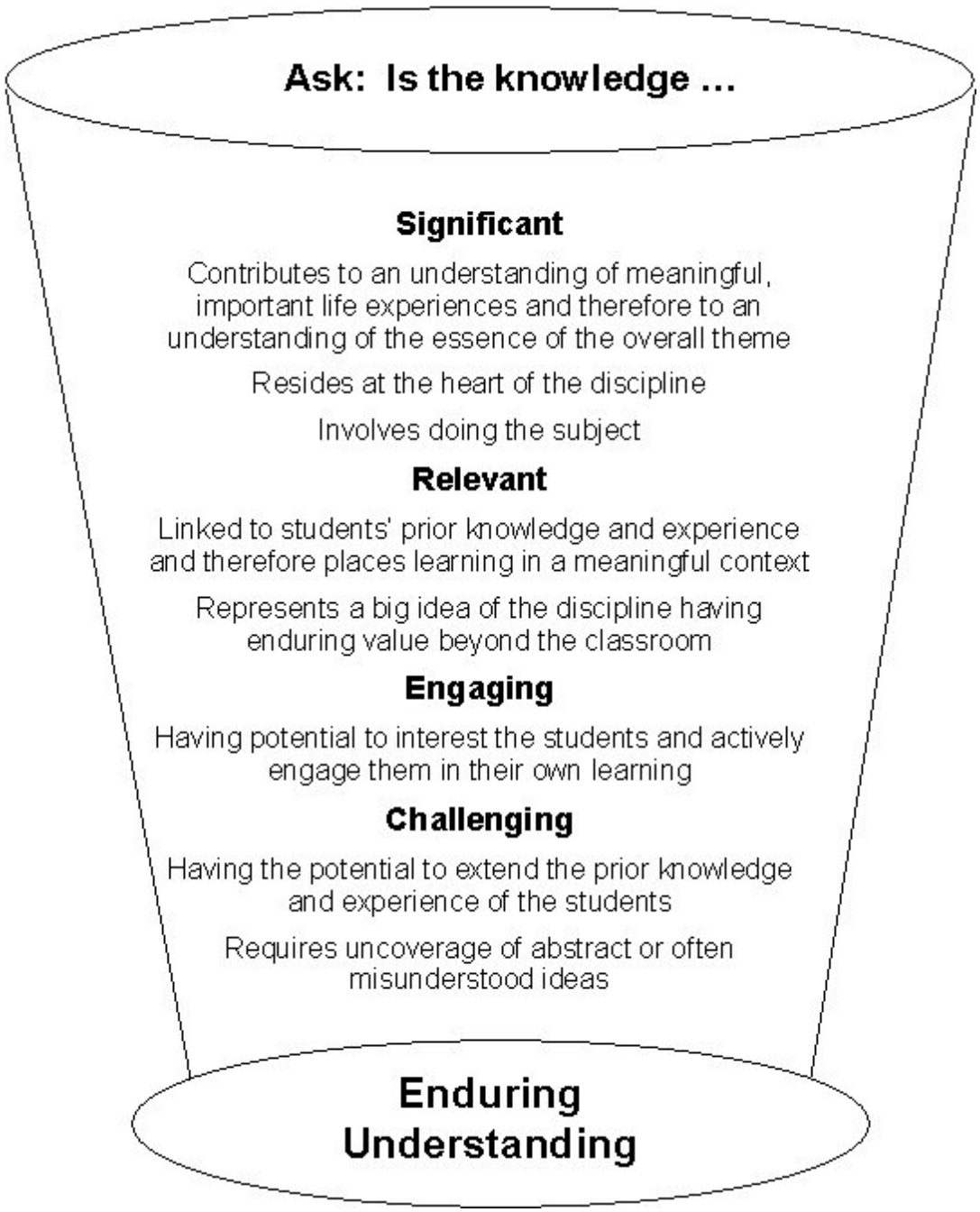
General questions to help students reflect:

1. What helps you learn?
2. What hinders your learning?
3. How do you help yourself to learn _____?
4. If you had to teach this to someone what else what would you do?
5. What makes someone a good reader/writer/speller/mathematician etc?

Other Reflection Prompts:

One thing I found hard _____ _____	One thing I found hard _____ _____
Something I have never done before was _____	Something I have never done before was _____
I feel _____ when _____	I feel _____ when _____
I'm still wondering about _____ _____	I'm still wondering about _____ _____
It was hard for me to learn _____	It was hard for me to learn _____
I wish I had been told more about _____	I wish I had been told more about _____

What criteria do we use in deciding what our unit of inquiry will be about?



What does Inquiry look like?

Classroom Ideas mainly for **BUILDING FROM THE KNOWN, TUNING IN & MAKING CONNECTIONS**

Some of these ideas from K Short's book "Learning Together Through Inquiry".

As a teacher – your initial role in the Inquiry process is to set up and plan for the engagement/situations – listen, record, ask questions to find out or encourage thought …

Be a kid-watcher.

Some ways to find out what students know/understand …

1. Visual Representations (Mathematical & Visual Tools)
2. Mindmapping – initial/mid and end of unit focus – shows development – colour code to reflect this.
3. Graphs, comparison charts, maps, Venn diagrams, flow charts, timelines, webs etc.

Supporting students in their Inquiries means some of these strategies and skills need to be taught.

1. Written Reflections
   Guide by questioning (see your handout from the Inquiry Workshop)
2. Free Writes
   Write what you know, whatever comes to mind, what you understand about …

3. Sketch to Sketch
   Draw symbols and use images to show understanding (can be accompanied by either a written description or verbal responses scribed by teacher).
   This can also replace next idea – "Sketch Journals" – students use art to express their thoughts, feelings, ideas, learning and carry them with them most of the time and use different materials to record.

4. Journal Writing (with a focus)
   It is vital that the teacher either use questions to frame reflections/journal entries and guide children's writing until they are proficient or the teacher could:
   a. Model by sharing their own entry and discussing features etc
   b. Construct an entry together with the entire class
   c. Allow for individual journal entries

5. Artefacts
   Bring in to share understanding of a concept
   Play "Save the Last Word for Me"

6. Small Group Interviews
   Post questions and students either scribe responses on paper strips or teacher scribes with a focus on a group at a time.

7. A web/timeline or some form of visual representation that responds to the questions can then be created (these can be anonymous) and up for all to see so that everyone can appreciate and learn from the perspectives/knowledge/experiences of others.
   Eg: What do you know about the discovery of Australia?
   It was led by the First Fleet … Captain Cook discovered Australia … It was found by accident…
8. Graffiti Board
   Take a corner of the poster paper (group of 4) and record words, phrases, ideas, images etc that reflect what you know about … your understanding of … (sign)

9. Learning Logs
   Tracking the thoughts, current and new knowledge, understandings, skills, reflections, feelings etc.
   Done on a daily basis.

10. Wonder Walls
    Record questions and sign off.
    Show teacher what learner is thinking about and what they want to know.

11. "I Wonder" Booklets
    Record questions and wonderings.

12. Reflective Drama
    This is more appropriate for the stage of "gaining new perspectives".
    Take on the role of someone and share what you know/understand from their perspective.
    Work in pairs with one person a reporter who interviews the other person.
    Reflective drama is not a performance for others, but a way for students to push their thinking about people and events they encounter in their investigations.

13. Interest Groups
    Pose Questions.
    Group categories under concepts or headings.
    Collate as a whole class and then create interest groups.
    Students choose the focus that most interests them and this allows for some choice regarding own inquiries.
    Not everyone needs to be inquiring about the same thing … BUT make time for the sharing back, so all are learning from each other.

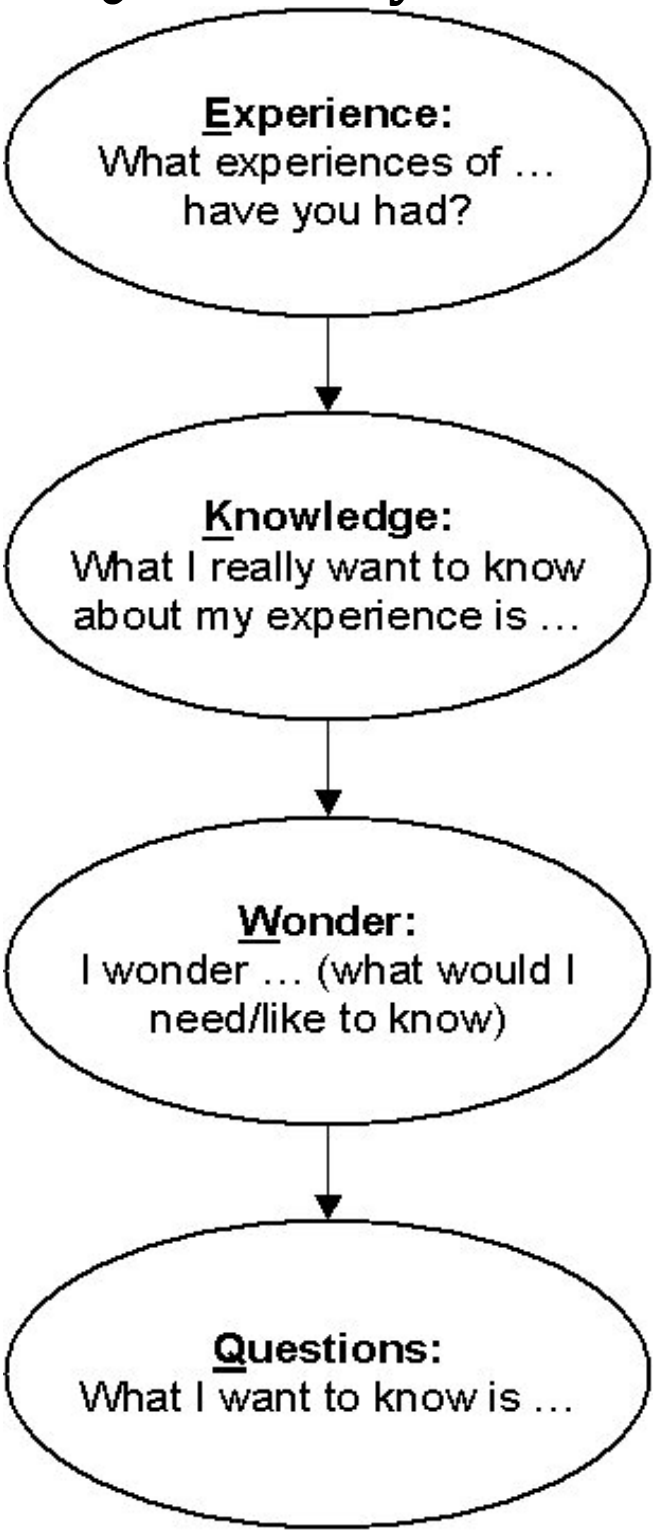
14. Text Books & Toys/Concrete Items
    Set up room so that books are supported by tangible items, eg books about machines with bulldozers, trucks etc.
    Students integrate play/exploration with books.
    Observe and note dialogue/discussions.

15. Tape Group Discussions

16. Message Board
    Encourage students to ask questions.
    Record wonderings and others to respond.
    Initials will assist with your own records.
    Could set up a pen pal system.

Inquiry as a Teaching-Learning Process

EKWQ model: Sylvia Chard

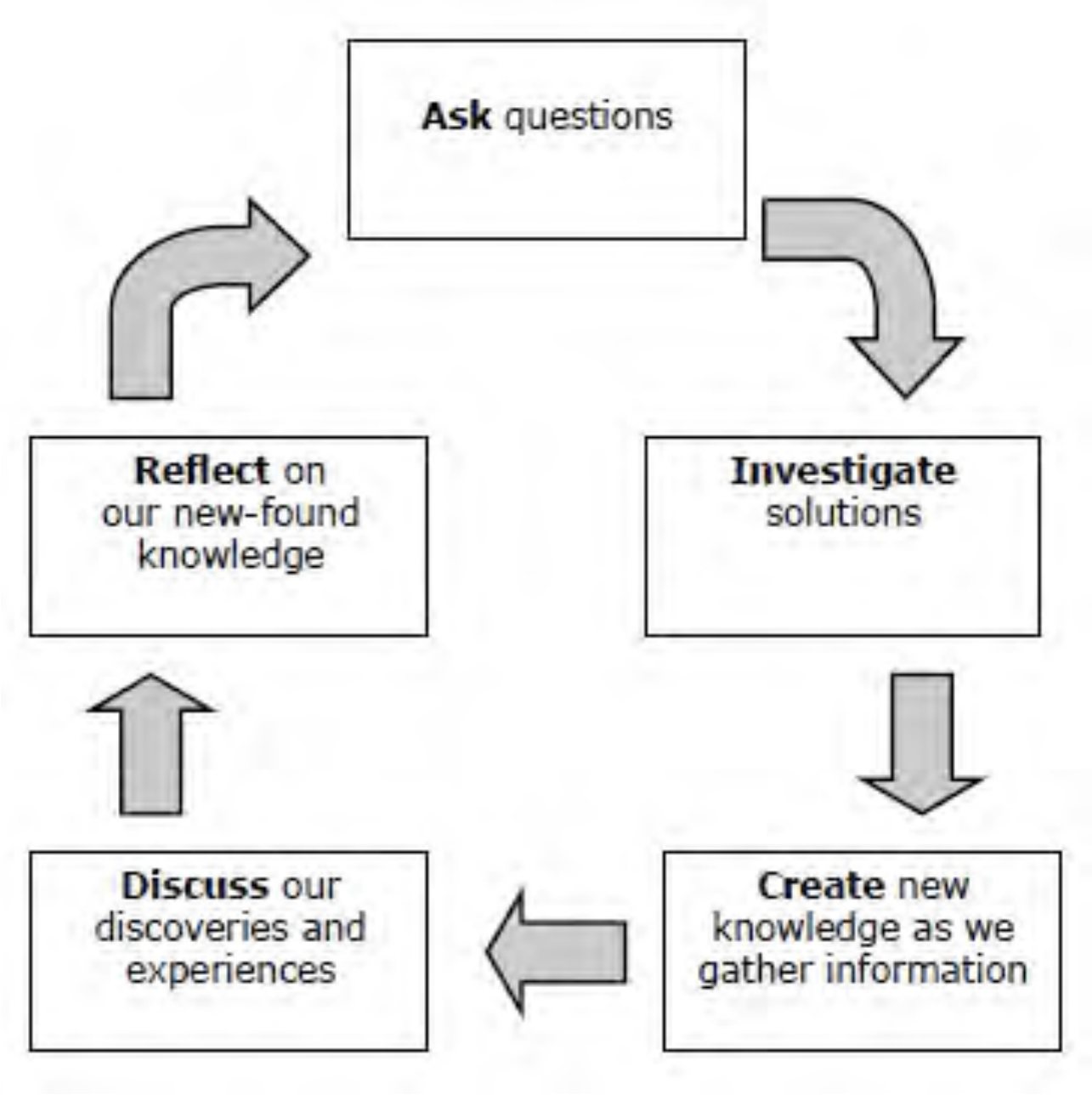


The Inquiry Cycle: Kathy Short

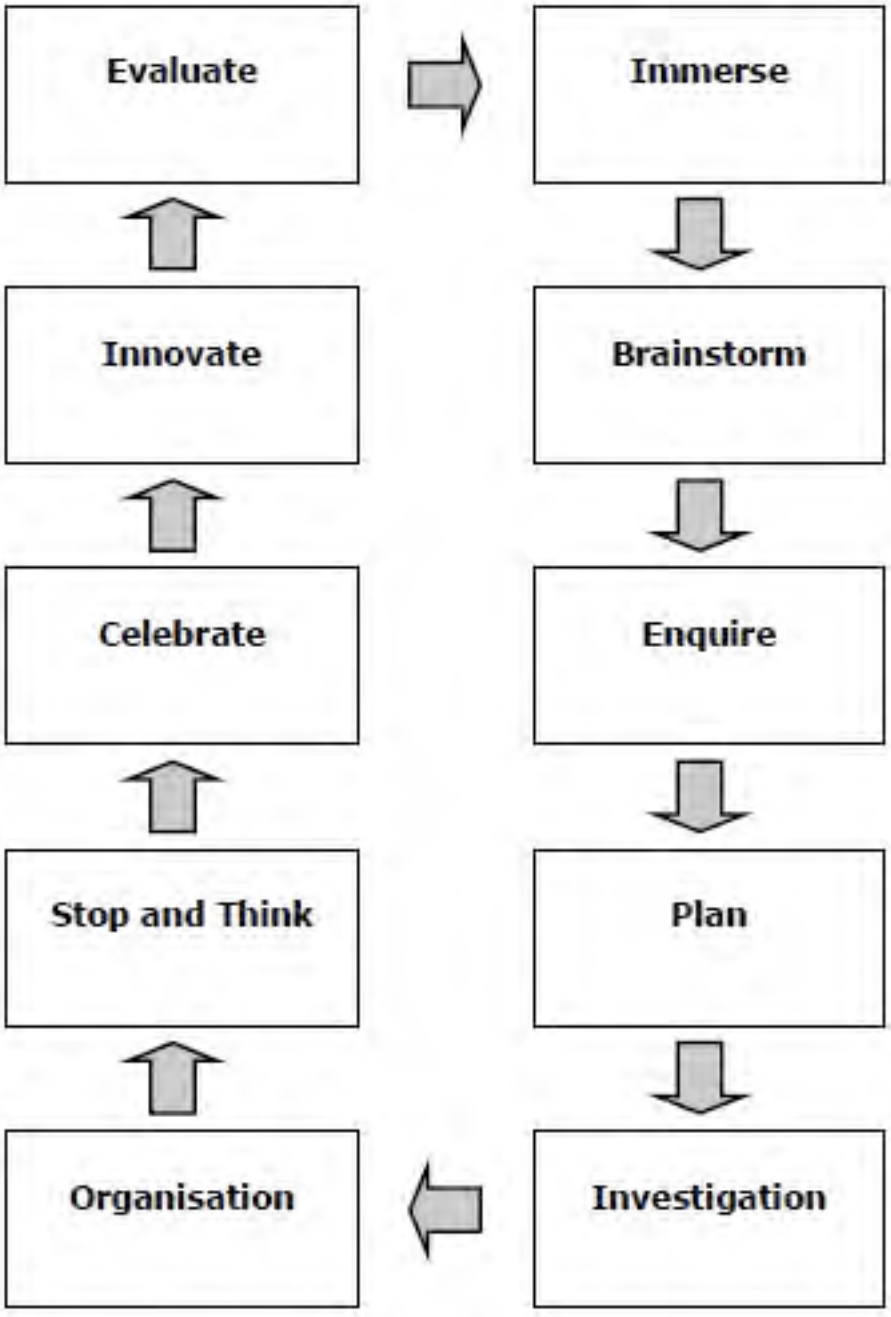
The Inquiry Cycle

Kathy G. Short & Jerome C. Harste, 2002

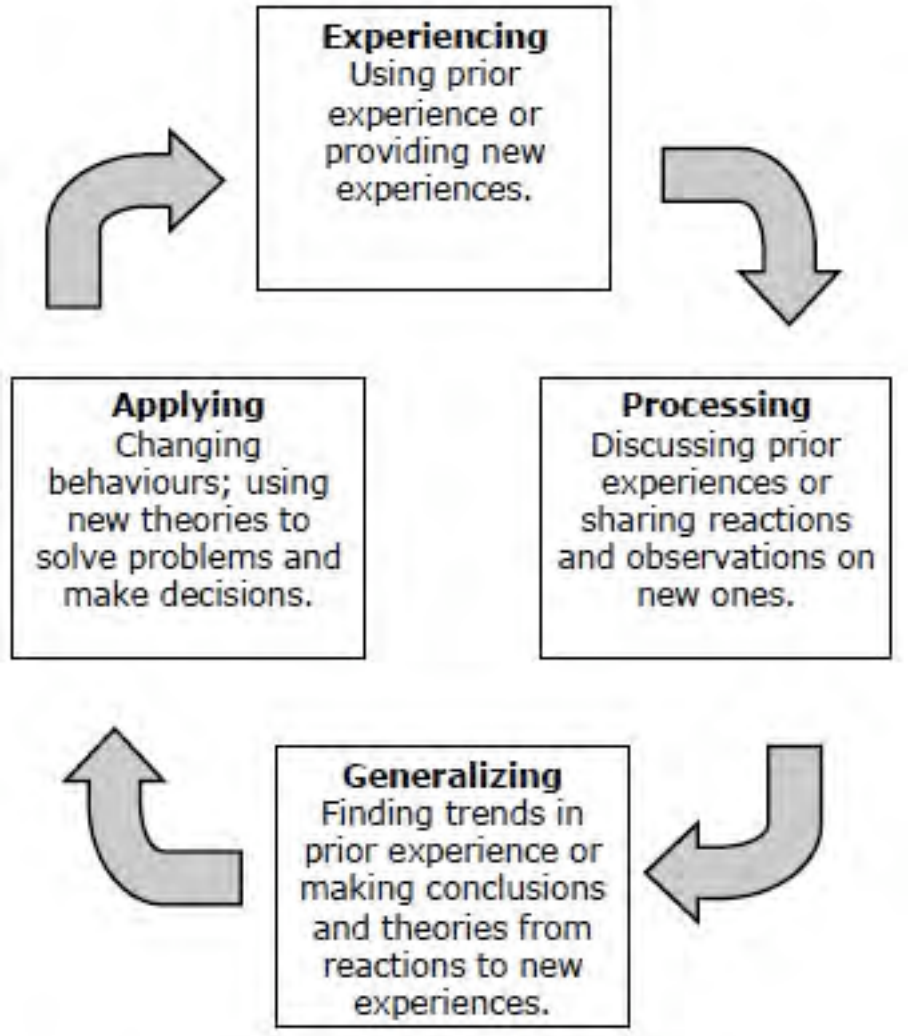
Inquiry Process: John Dewey



Authentic Learning: Thomas Friedman



The Adult Learning Cycle: Kolb



Kathy Short's Model of Inquiry

Stage of inquiry	Examples of skills needed
Planning	• Defining the key issues or problem • Identifying prior knowledge and questions • Identifying information needs • Hypothesising and predicting • Setting goals and time lines
Gathering information	• Identifying resource needs • Locating and using a range of resources • Searching for and locating key ideas • Detecting bias, points of view, prejudices
Sorting information	• Ordering, classifying, analyzing, synthesizing, reasoning • Considering alternatives • Considering different perspectives • Evaluating information and ideas • Suggesting consequences
Making connections and generalisations	• Comparing and contrasting • Questioning • Justifying statements • Interpreting information
Communicating	• Representing information in a variety of ways • Reporting on the information gained and on the inquiry process • Summarising
Reflecting	• Thinking about and self-assessing their learning and the process of learning • Modifying
Applying	• Setting goals • Making decisions

Classroom Connections:
Kath Murdoch

Tuning In
(Getting the children interested in the unit)

Finding Out
(*Researching or gathering information)*

Sorting Out
(Sorting the information into categories)

Going Further
(*Adding more interesting information)*

Making Connections
(Analysing & linking to themselves and their environment)

Taking Action
(Making an informed decision to do something)

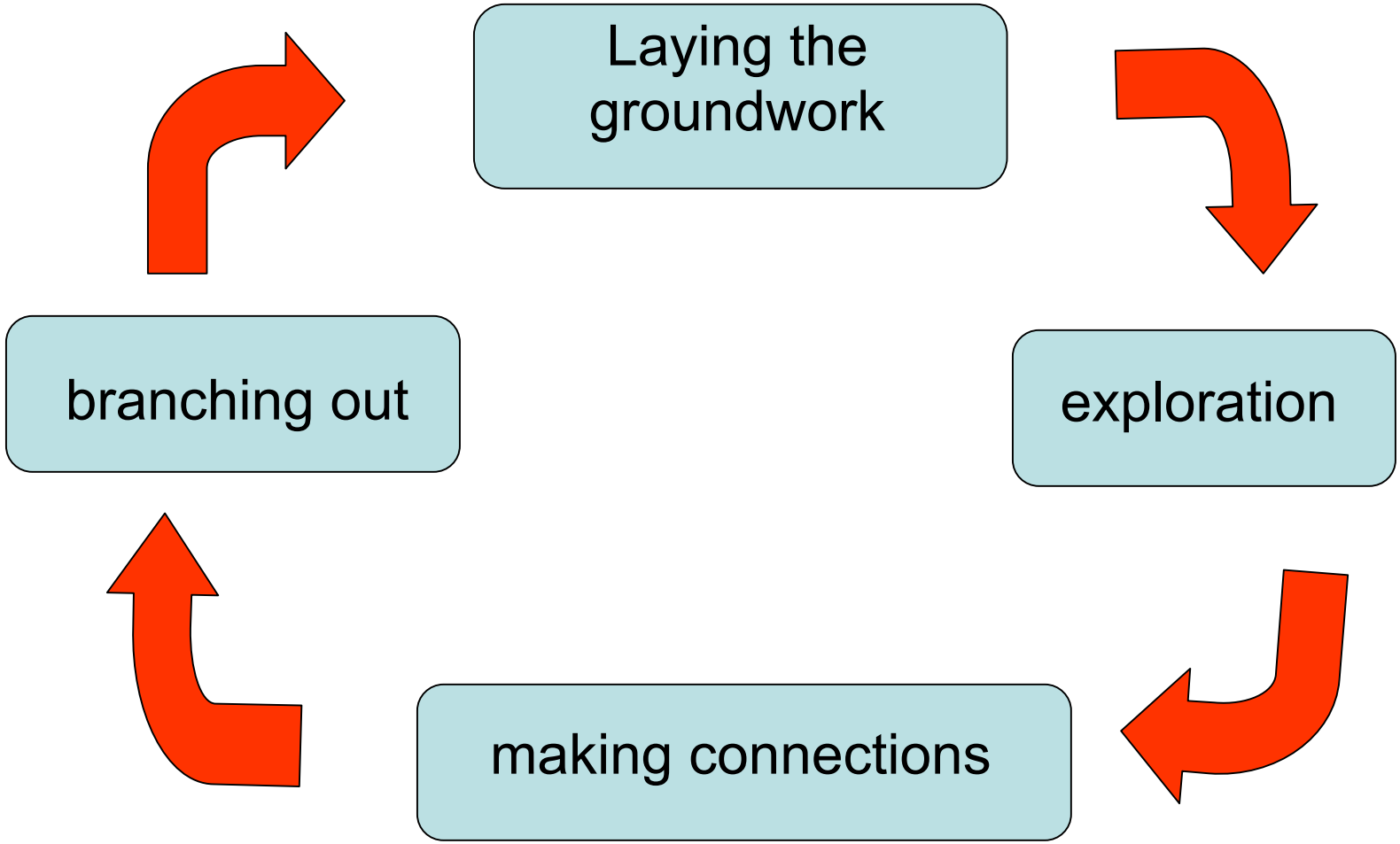
Features of Inquiry-based learning and implications for teaching
© Kath Murdoch 2008

Feature of Inquiry	Some implications for teaching
A. Students are encouraged to **ask questions** about things they want and need to know. These questions are used by teachers to help plan and give some direction to what they will teach.	Record student questions throughout a learning sequence and regularly 'check in' on the progress of working towards answers Provide opportunities for students to ask questions at all times during a unit – not just the beginning. Questions also allow for differentiation of content Teach students HOW to ask different kinds of questions for different purposes.
B. Students' **own experiences and understandings** of the topic are explored before new experiences are provided. Connections are made from known to new knowledge.	Spend time early in a unit gathering evidence of current understanding of the topic. Use this evidence to modify teaching plans and as baseline data for final assessment. Students should also use this evidence to compare and contrast changes in their understanding towards the end of a unit
C. Students are involved in **gathering information** and finding out for themselves – not simply being told by the teacher. There is an emphasis on **hands on and real** experiences	This is the key to inquiry. Regardless of the subject area – the inquiring teacher gives students opportunities to **explore and discover for themselves** and *then* teaches at the point of need. Learning a new skill can emerge through exploration and experimentation – students gradually uncovering the best ways to do something, learning from each other and scaffolded by the teacher.
D. It is not simply the content that the students are learning. They are **learning HOW to learn** – so the learning process is as important as the content.	Critical to the inquiry process, this means that all teachers, regardless of the subject area,topic or age group - make explicit references to HOW learning is taking place – not just what is being learned. This can happen through the way we discuss learning with students, eg: • What strategy could we use to make sense of this? • What did you find easy/difficult about learning that? Why? • What might be the best way for you to learn to do this? • How could you show me what you understand about this? • What are you noticing about yourself as a learner while you are doing this? • How is learning about this different to other things you are learning about? What does that tell you? • How are you feeling about this learning? • Is there something you are learning in this that reminds you of other learning experiences?

E. The students are encouraged to learn and express their learning in a range of ways. **Different learning styles** are provided for.	Activities need to take into account our visual, auditory and kinesthetic learners. Students should be aware of different learning styles - their strengths and weaknesses and ways to attend to both.
F. Not all students do the same thing at the same time. Students are encouraged to learn and work in ways that are appropriate to their learning needs.	Learning tasks should be open ended – allowing different entry points
G. Lots of **interaction** is encouraged. Students should be interacting with, talking and sharing with each other. They work in cooperative groups as well as pairs and on their own.	Cooperative learning and group based problem solving tasks should be used regularly. Encourage peer teaching/coaching Avoid teaching to whole class – keep this to a minimum. Use small teaching groups. Whole class for share time at beginning and end. Teach cooperatve learning skills explicity.
H. The teacher encourages students to think for themselves – to **think** logically, creatively and reflectively.	Build a repertoire of thinking skills and strategies that can be used across learning areas: Eg: debonos thinking hats, Tony Ryans thinkers keys, PMI, POOCH, SCAMPER, Blooms Taxonomy etc Use questioning to encourage students to think more deeply and independently.
I Students make **choices** in their learning.	Find ways to allow students to follow paths of interest and needs Develop long term tasks that allow students to independently plan, develop and monitor their own progress Provide options for ways to present learning
J. Students are encouraged to take **action** based on what they have learned – to use it in some way to make a difference to their lives and the lives of others.	Encourage students to continually link what they are doing with real life applications. Wherever possible, provide a real life purpose and context for learning the topic/skill Ask: How can you use this somewhere else? How might being able to do this help you in your learning? Your life?
K. Subject areas are **integrated** in inquiry – connections are made between different areas of the curriculum	Plan wherever possible, WITH others working with the same group of students Find out about the understandings the students are working towards as well as the transdisciplinary skills being focused on. Use these as a point of connection between specialist and generalist teaching or across subject areas

INTEGRATED ASSESSMENT (Leslie Wing Jang/ Jeni Wilson)	Authentic Learning (Thomas Friedman)
Tuning in Shared experiences Sorting out Related experiences Reflection Action	Immerse Brainstorm Enquire Plan Investigate Organise Stop and Think Celebrate Innovate Evaluate

Teaching/learning cycle



1. Building from the Known
Browsing, talking, listening

2. Taking the Time to Find Questions for Inquiry
Wondering & Wandering
Observing & Exploring

7. Taking Thoughtful New Action
Invitation for action

The Inquiry Cycle

3. Gaining New Perspectives
Inquiry groups
In depth researching
Tools for Inquiry

6. Planning New Inquiries
Group Reflection
Reflection Portfolios

5. Sharing What Was Learned
Inquiry presentations

4. Attending to Difference
Revision on inquiry
Learning logs

ACTIVITY

STAGES	ACTIVITIES
Tuning In *(Getting the children interested in the unit)*	
Finding Out (*Researching or gathering information)*	
Sorting Out *(Sorting the information into categories)*	
Going Further (*Adding more interesting information)*	
Making Connections *(Analysing & linking to themselves and their environment)*	
Taking Action *(Making an informed decision to do something)*	

Ideas taken from Kath Murdoch's book, 'Classroom Connections'

Activities that help to set the scene of the Inquiry

Possible sentences	Post-a-question	Question of the day
Rocket writing	Silent jigsaw	Something from home
Startling statements	Think, pair, share	Topic Wheels
Visualisation and making predictions		Labelled Diagrams
Comic Strips	Plasticine models	3D models
Maps/floor plans	Flow diagrams	X-ray diagrams
Word association and definition		Animals and plants in the classroom
Ask an expert	CD-Roms	Excursions
Experiments	Film, videos and television	Interviews and surveys
Letter writing	Newspapers and magazines	Paintings, photographs
Picture Books and novels	Shared book experiences	Internet

Extending the Student's Inquiries

Mime	Puppet plays	Role-play
Talk shows	Simulations	Collage
Dioramas	Models	Visual Artwork
Diagrams	Making videos	Mobiles
Radio plays	PowerPoint	Maths projects
Graphs	Scale models	Timelines
Venn diagrams	Chants	Raps
Musical stories	Writing	Oral reports
Debates	Poetry Writing	Bookmaking
Puzzle cards	Board games	Concept Maps
Crossword Puzzles	De Bono's thinking hats	PMY
Similes and metaphors	Concentric circles	Expert groups
	Seven at one multiple intelligences	

Inquiry Planning Checklist

When reviewing your planning to consider whether you could incorporate a greater degree of **inquiry** ask yourself the following question:

> Where and how can I effectively increase student initiative and choice?

THEN CONSIDER THE FOLLOWING POINTS:

- ☐ Did I find out first what students understand about the topic, what experiences they have had and what connections they can make?
- ☐ Did I establish the purpose for learning this by connecting it to the real world? Where would I see examples of this in real life? Why is it useful? How can we find out more?
- ☐ Did I allow students to suggest and collect authentic resources and experience for this learning?
- ☐ Did I allow students the opportunity to identify connections, problems and questions?
- ☐ Did I allow for some choice in how we might develop our thinking or test our hypotheses?
- ☐ Did I offer students the possibility to explore a variety of outcomes or products?
- ☐ Did I encourage students to establish/ help develop a set of criteria for success?
- ☐ Did I involve students in reflection and assessing themselves?

An inquiry quick check…
Tick as appropriate!

N.B. Both boxes can be ticked in each row.

Who contributed / suggested the resources?	Teacher	Student
Who posed the problem?	Teacher	Student
Who determined the process?	Teacher	Student
Who decided on possible outcomes?	Teacher	Student
Who set the criteria for success?	Teacher	Student
Who assessed the work?	Teacher	Student

What to Look for in a PYP Classroom

Classroom Physical Environment	1	2	3	4
• Classroom space is unexciting and sterile • Displays of student work are minimal or old • Use of room demands students always remain at the same table • Resources are provided solely by the teacher for specific pre-planned lessons	○ Classroom space is inviting and stimulating ○ Displays of students work demonstrate achievements and ongoing learning and inquiry ○ Use of room enables students to switch flexibly between spaces appropriate to different activities ○ Resources (eg books, math manipulatives, computer) are easily accessible and respected by students			
Student Learning	**1**	**2**	**3**	**4**
Students are: • Bored and disinterested • Required to do work inappropriate to their level of language skills • Passive recipients of knowledge	Students are: ▪ Inquirers whose natural curiosity has been nurtured and who are empowered to feel responsible, show initiative and take action ▪ Involved in meaningful and engrossing activities appropriate to their knowledge and experience and their language skills ▪ Involved in planning and assessing their own learning			
Teaching Strategies	**1**	**2**	**3**	**4**
The Teacher: • Directs all activities and establishes all tasks • Employs only whole class teaching strategies • Requires students to conform to the same level of expectations • Is considered the authority on knowledge • Writes report cards	The Teacher: ▪ Facilitates open-ended inquiry and real life investigations, encouraging student initiative in choice of resources and appropriate means of expression ▪ Uses a range and appropriate balance of teaching and grouping strategies, switching flexibility between individual, group and whole class work ▪ Demonstrates high expectations of students ▪ Facilitates a balanced emphasis between the pursuit of understanding and the acquisition of knowledge and essential skills ▪ Uses a range of assessment and self-assessment strategies with students			
Use of Programme Inquiry	**1**	**2**	**3**	**4**
▪ The teacher is not using the relevant planner. ▪ Students have little involvement in the ongoing direction of study.	▪ The teacher and students are clear about the central idea and questions driving inquiry of the relevant planner ▪ Ongoing student questions are valued and explored			
Multicultural International Environment	**1**	**2**	**3**	**4**
▪ The classroom environment utilises only a mono-cultural and mono-lingual approach ▪ The class is divided into faction disrespectful of one another	▪ The classroom environment openly celebrates the diversity of its students ▪ Teacher and students show respect, tolerance, and empathy towards others of different gender, nationality or levels of academic or language development etc			

You know inquiry is happening when….

Inquiry is more likely to be happening when…	Inquiry is less likely to be happening when…
Students' **questions and interests** are incorporated into the plans teachers make for their learning. Questions and questioning are at the heart of the planning and teaching.	Teachers decide all the content and processes students will use. The topic is defined as an end in itself (eg 'we are 'doing' endangered species) rather than a question for investigation.
The focus of an inquiry is (generally) **sustained over several weeks** – students work through a **sequence** of phases towards deep understanding and action.	Teaching and learning occurs in disconnected episodes. There is no real sequence of tasks. Activities may be 'about the same topic' but they do not connect in authentic ways. Students may tackle activities in random sequence.
Students' **prior knowledge, interests and needs** are assessed early in an inquiry and then used to modify plans. Plans are **continually modified** according to the needs and responses of students.	Plans are made with little consideration of what students already understand or need to understand. Little analysis of prior knowledge and skill is done. Some units may be planned very thoroughly and then tasks 'checked off' as the term progresses. They are rarely modified.
Effective inquiries are generally driven by **teams** of teachers **who plan, reflect, assess and evaluate together**.	Planning occurs in isolation or, even if there is a team, the primary task is to 'generate and record ideas' rather than to engage in professional reflection and analysis of progress.
Most inquiries have **direct relevance** to the lives of the students who are 'doing' the inquiry. They understand the value of the inquiry to their own lives. Students are often engaged in solving a **real problem or working on a real project** (eg a community based task) – the inquiry works towards an action of some kind.	Topics are selected by teachers and may bear little relevance to the lives of the students. There is little application to an immediate 'real life' context. Activities do not require students to work in real contexts (real people, places, problems)
The inquiry works towards the development of deeper **understanding** about the way the world works. There is a clear connection between the specific inquiry being developed and 'bigger picture', **transferable** concepts.	The topic lacks transferability. Students (and teachers) see the tasks as pertinent to that subject/objective/unit or outcome. There are no discernable links made to a wider context.

Students are given the opportunity to make some **choices** about what they will learn, how they will learn, how they will show what they know.	Students make few- if any real- choices about their learning. The teacher takes responsibility for most learning decisions.
Assessment is deliberately **built into the inquiry** process. Multiple assessment measures are used. Students engage in self and peer assessment. Assessment focuses on deep understanding.	Assessment is mainly summative (end of unit) and determined by teachers. Assessment often focuses on lower order facts and skills
Students focus on the **processes** by which they are learning as much as the content. Generic skills required for **collaboration, thinking, communicating, research** are given high priority in the teachers' planning and are included in assessment. These processed are taught explicitly and it is expected that students will apply them to a wide range of learning contexts.	Generic skills are often not clearly articulated (if at all). The focus is on subject related skills and narrow content knowledge. Students are not required to demonstrate much about the processes they are using in their learning and thinking. Startegies and procedures used in one unit/subject are not explicity transferred to another.
Resources are generally real and immediate. Raw, **primary data, first hand experiences** are favoured so students do as much of the investigating and analysis for themselves.	Most sources are secondary.
Fewer tasks are planned – **but they tend to be extended, open ended and layered.** They require deeper thinking and the use of multiple skills (eg students might be working in *teams* on a *higher order thinking* task that will *be assessed by their peers*)	Activities are often self sufficient – they begin and end within the confines of 'a lesson' and few layers and require less depth of thinking.
Genuine **connections are made between learning areas** (although inquiry can happen within one discipline, it can be enhanced by quality integrated curriculum)	Loose or no connections are made between learning areas. Students may 'do' activities in different learning areas but there is no direct link to understandings.
Tasks offered to students allow them to work in a range of ways – catering for different **learning styles.**	Tasks are less varied and may require dominantly linguistic ways of knowing and communicating.
Students are (ultimately) able to **construct an inquiry for themselves** – designing a question, avenues for investigation, appropriate communication and action.	Students come away with content knowledge but they are less able to apply their learning to a new question or proposition. They are not able to articulate HOW they would go about the learning process for themselves.

Strategies to use during an integrated inquiry

The strategies outlined below are used in *purposeful* ways as students work towards finding answers to their questions and thinking more deeply about a topic. This table provides some examples only –there are many more!

Stage of inquiry and key questions	Sample strategies relevant to this phase
Tuning in (to our thinking) • What is this inquiry all about? • Why is this worth investigating? • What might this inquiry be working towards? Where are we headed? • **What experiences and information to we bring to this inquiry?** • What do we already think, feel and know about this? • (**may** include 'immersion' or 'frontloading' experience.)	• Concept mapping, flow charts, Y charts and other visual organizers • True/False statements – sort into what you think NOW… • Structured brainstorms (eg 1-3-6; hot potato) • Labelled diagrams/drawings, art works • Listing, bundling key questions – fat and skinny questions • Structured discussions (eg using talk tokens; paired interviews; piggy back brainstorming, round robin brainstorm) • PMI's using prior knowledge • Using visual texts – analysis/captions • Talk to the picture – what does the picture tell you? • Collaborative quiz • Writing/speaking from experience • Interviewing each other (eg using donut strategy) • Post box – collecting data about the class's prior knowledge • Sharing objects, photos and other artefacts from home – writing about those • Posing problems or challenges associated with this topic – how would we go about solving this now? (compare later) • Initial definitions (eg using think, pair share) • KWL (use sparingly!) • Exploring related objects – what do we know about these? How are they linked? (placemat to record thinking) • Mind maps • Word splash – defining and connecting key word • Open ended play based learning centres – teacher interaction and observation used to assess prior learning and interests • NSEW: Need to know, Suggestions for finding out, Excited about, Worried about…

Finding out more …. • How can we gather information about this? • How will we organise to gather information? • How will we contact people/places we need? • What do other people/texts say about this? • What does this information make us wonder more about? • How will we record what we are finding out? • How does information about this compare from one source to another? • What views do the texts represent? • How does this challenge or compare with the ideas we had earlier in the unit?	• Excursions and incursions – and the organization and recording associated with these.' • Working with/learning from real people in the community with expertise in the field • Observing and recording real events, behaviors (eg school ground, community) • Conducting experiments (long and short term) to gather data • Composing questions and defining terms • Listening to, reading and analysing song lyrics • Using literature and picture story books to extend experience of the concept • Viewing videos/film, photos, paintings and other visual texts as resources – recording information • Interviewing experts on the topic Interviewing a range of people to seek opinions or gather data • Creating and conducting surveys • Reading a range of print material (fiction and non fiction books, pamphlets, maps, charts, etc.) to gather information • Critical use of the internet or CD rom – webquests, using smartboard for interactive teaching • Note taking and other record keeping to document research • Learning from each other – individual or small group presentations on an aspect of the topic • Letter writing • Emails, Faxes, Phone calls • Web searches, use of websites, wikis, clips, simulations etc

Sorting out and making connections • What does all this mean? • What themes or patterns are emerging across the data? • What are we learning? • How can we show what we understand? • How can we express our thoughts and feelings about this? • What are the best ways to show what we know and understand? • How does this help answer our questions? • What new questions arise? • What texts can we create? • How have we come to learn this? What has been useful information? • What do we still need to do/find out?	• Artistic representations – (show what you have found out) across all modes of visual arts • Musical composition – instrumental, vocal, using existing pieces and making a sound scape) Raps, chants, songs • Movement and dance – mime, freeze frame, short skits • Mathematical forms of visual representation, mapping, graphing, venn diagrams • Writing across genres • Reading 'comprehension' tasks: TS, TT, TW, talk to the author, • Data charts and other graphic organizers to help sort and represent thinking about the topic • Using photos for visual and written responses • Drama activities: role play, question in role, conscience game • Writing statements of generalisation • Consequence wheels • DeBono's Thinking Hats • Thinkers Gears • Revisiting early work (tuning in) – how has our thinking changed? • Using metaphor and analogy • Diagramatic representations of the concept • Matching cause and effect • Compare and contrast (with related concept) • Creating digital texts –web pages, excel, powerpoint, etc. • Mind maps and other visual organizers that emphasise sorting and connections • True/False statements

Going Further (independent inquiry) • How can we take this further? • What questions do we have as individuals or small groups? • What are our special interests? • What's another way of finding out about this? • Now, what do we want and need to know more about? • How can we find out about our wonderings? • Who and what can help us find out more? • How can we organise for our own inquiry? • What choices are available to us?	• Wonderwall. Wonder boxes: following up new lines of inquiry. Creating small interest based inquiry groups • Individual and/or small group contracts with a range of choices for students • Individualised mini inquiries • Alternative 'finding out' experiences – new texts, contrasting experiences • Focussed research tasks around unanswered questions or interests • Individual or small group work leading to culminating task • Learning centres/research centres • Jigsaw – expert groups • Working in real life problems.issues associated with this topic
Reflecting and Taking action (culminating tasks) • What will we do with this? • How can we do something with what we have learned? • How have others made a difference? What could we do? What should be passed on? • What do we still need to know? Do?	• Exhibitions of learning to school and community. What and how can we teach others? • Performances, 'show offs' to promote a cause or celebrate learning • Social or environmental action projects – working with local and global communities to make a difference • Creating pamphlets and other texts to promote, persuade, encourage, inform • Personal goal setting and action plans • Publishing writing to celebrate the inquiry throughout the unit • Learning logs/research journals/thinking books…various self and peer assessment tasks • Reviewing and responding to questions asked during the inquiry

Throughout an inquiry:

- Class inquiry journals/diaries to track the process and the content being developed
- Wonderwalls to which answers are gradually added
- Individual diaries/log books to document the journey
- Class wall displays – added to as the unit unfolds
- Digital diaries of the process
- Video diaries of the process
- Large mind maps displayed and added to
- Chart 'How is our thinking changing?
- Regular share time to stop and reflect: what are we learning? Are our questions being answered? How are we learning? Now what?

Professional.READINGS

Identifying Inquiry in the K-5 classroom
By Doris Ash and Barry Kluger-Bell

So they can fly… Building a Community of Inquirers
By Linda Gibson-Langford and Di Laycock

What is Inquiry Learning?
By: Jeni Wilson and Kath Murdoch

4

Chapter 4: Designing Inquiry Activities

The Planning Phase of inquiry is the key to success for teachers, who develop the lesson plans for the inquiry activity, and for students, who are involved in the inquiry. Teachers who plan successful inquiry-based learning activities take the time to think through the process. This planning determines the success of an activity and cannot be overemphasized. In designing an inquiry activity, teachers also follow their own inquiry process.

Inquiry-based learning requires many skills and strategies and a wide range of resources from beyond the school library and classroom. It is important that teachers select a curriculum theme that is worthy of the time and effort involved and that will be interesting to students for more than a short-term period. Early selection of a theme and inquiry activity will give teachers the time to build the students' background knowledge, to develop the inquiry skills and strategies that students will need, and to acquire or add to the required resources.

Facilitating inquiry-based learning

Students learn inquiry skills, strategies and processes more readily when inquiry-based learning activities are:

- integrated with curriculum
- taught with the focus on developing lifelong learners and critical thinkers
- viewed by students as relevant to their needs
- related to the students' past experiences
- shared through cooperative learning.

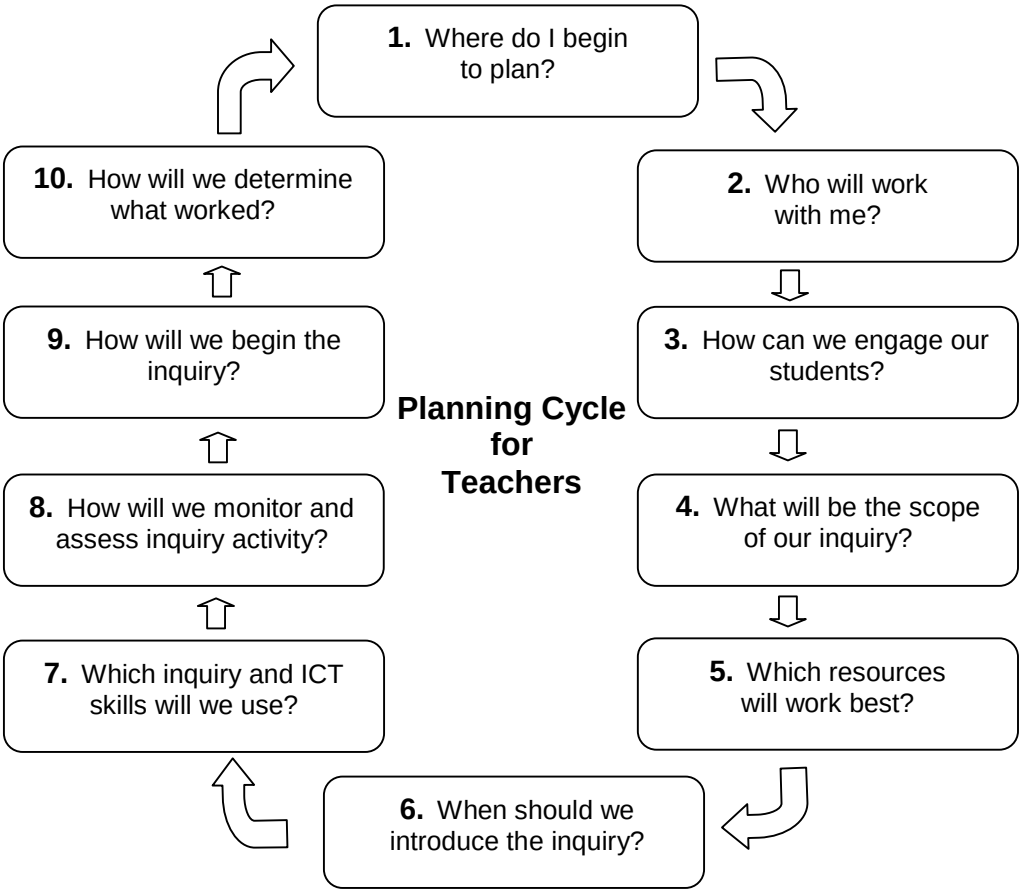
To help students develop an understanding of the inquiry process, the teacher(s) and/or teacher-librarian:

- identifies a curriculum entry point
- designs an inquiry-based learning project/activity
- supports students as they generate and refine a topic
- models the process out loud to help students.

As students work through the inquiry process, the teacher(s) and/or teacher-librarian:

- motivates students to locate, analyze and use information
- assists students to clarify thinking through questioning, paraphrasing and talking through tasks
- provides students with opportunities to record information

- provides students with opportunities to focus on steps required to complete their inquiries
- individualizes teaching
- evaluates student progress in content and process areas
- models inquiry behaviours (e.g., demonstrating and modelling the inquiry-based learning process)
- facilitates and models questioning behaviours (e.g., providing opportunities for students to develop and ask questions).



Focus on success: Planning an inquiry-based learning activity

Step 1: Where do I begin to plan?
If your school has developed a school-wide plan so that all students can experience inquiry-based learning activities throughout their school career, then consult this plan first. School plans vary the content areas and ensure that students are learning, practising and improving their inquiry skills and strategies as they progress through the grades.

If your school has not yet developed a school-wide plan for developing student inquiry skills and strategies, begin with the programs of study, which all have inquiry-based outcomes (see Chapter 3), and select an area that will intrigue and interest both you and your students.

Step 2: Who will work with me?
Collaborative teacher teams produce better results from students. The following are some possibilities for teams:

- Work with another teacher or with all teachers in a particular grade or level to team teach and develop the inquiry unit. Working collaboratively allows each teacher to share unique experiences and skills. More importantly, when students in the same grade get the opportunity to do an inquiry, it promotes equity and ensures that they all receive instruction in the same skills and strategies.
- Cooperative planning of an inquiry with a colleague or a team of teachers should be approached in the same manner as with the teacher-librarian, except that two or more classes are now involved. In the team-planning approach, each teacher brings special talents that can be used. The team approach also divides the labour and lightens the workload. After the unit planning is complete, each teacher adapts the unit to the needs of his or her students.
- Work with a teacher-librarian to plan inquiry-based learning units together. The teacher-librarian brings to the activity expertise in inquiry-based learning, resource selection, Web site selection and evaluation, and, most importantly, strategies for integrating information literacy skills into the inquiry.
- If no teacher-partners are available, discuss your inquiry with the library technician or assistant and ask for support to locate a variety of print, nonprint and Internet resources.

Integrating inquiry-based learning activities into the curriculum is evolutionary. For teachers who are new to integrating inquiry activities, begin slowly. As teachers and students experience positive development in teaching methods and skills, their commitment to inquiry will increase. The ideal situation for developing an inquiry unit occurs when team teaching or cooperative planning occurs between a teacher-librarian and teacher or between teachers (Alberta Education, 1990, pp. 28–29).

Cooperative planning

Cooperative planning of an inquiry activity involves a teacher working with a teacher-librarian, or teachers working together. The first step is to set out objectives for the inquiry and plan the activities with the teacher-librarian or other teachers. The teaching of inquiry and information literacy skills should be integrated into the plan. Cooperative planning allows for variations in group size (e.g., whole class, two teaching groups, small groups).

Step 3: How can we engage our students?
Decide which unit provides the best opportunities for inquiry-based learning.

- Begin with the program of studies and your yearly plan.
- Think about resources in your school and community.
- Look for entry points, as well as topics that will engage students' interests and involve a problem or issue.
- Choose a curriculum-based theme for which:
  - background knowledge will be developed prior to the inquiry
  - students bring a strong background of experience or knowledge.
- Consider if the theme presents many opportunities to engage all students in your class, including male and female students, the highly motivated and those who require a lot of encouragement.
- Consider that a complex topic may require additional guidance for students so that they realize the importance of the issue and its potential impact on the lives of people.
- Keep in mind that some themes popular with young children may not have resources available at the appropriate reading level.

4

Tips for Teachers
To integrate inquiry skills into the curriculum, the teachers and/or teacher-librarian:

- understand the skills involved in inquiry
- are committed to student-centred learning
- plan for the inquiry process and thinking skill development
- are flexible in teaching styles
- assess the inquiry skills that students have and need
- are aware of children's needs and capabilities (see Appendix A, p. 91)
- adapt to new findings in learning theory and child development.

Step 4: What will be the scope of our inquiry?
Decide on the scope and end product of the inquiry activity.

- If teaching inquiry-based learning for the first time, limit the scope of the project in terms of time, topic selection and end product. Focus on ensuring success for your students.
- Consider how many product formats you are willing to teach.
- Make sure that students will share information in a way that is very simple or very familiar to them.
- Set timelines and specific classes for the inquiry activity.

Roles of the teacher in an inquiry-based classroom

1. Motivator
2. Diagnostician
3. Guide
4. Innovator
5. Experimenter
6. Researcher
7. Modeller
8. Mentor
9. Collaborator
10. Learner

(Crawford, 2000)

Step 5: Which resources will work best?
Select appropriate resources and plan for their use. The inquiry activity may have to be redefined at this point to take into account available resources.

- Choose resources in different formats (e.g., print, nonprint, digital, multimedia) and at different reading and literacy levels.
- Use a station approach in the classroom or school library if resources are very limited.
- Confirm, arrange and/or set up access to resources.
- Schedule time for students to browse through resources in the school library or classroom before the inquiry begins, so they become comfortable with resources other than textbooks.

Tips for Teachers: Building for Student Success
Using a classroom library to offer resources on a topic is one way of introducing a variety of resources to support the inquiry. Follow the school jurisdiction's Learning Resources Selection and Controversial Issues Policies.

Step 6: When should we introduce the inquiry?
Determine the order in which the unit and inquiry activity will be taught.

- Plan the inquiry project for the mid-point to the end of a unit, once students have learned background knowledge on the theme. Students will have developed interest in the topic and will have had a chance to think about questions of particular interest to them.
- Let students know in advance when they will start an inquiry activity—this allows students to think about topics, talk to friends and family about the topic, and gather resources in advance. It may also help with choosing and narrowing the topic, and in identifying any controversial issues (Alberta Learning, 2004, pp. 82–83).

Step 7: Which inquiry and ICT skills will we use?
Determine which inquiry and ICT skills, if appropriate, will be stressed throughout the inquiry and which will be taught prior to the inquiry activity.

- Assess students' competencies in a variety of inquiry skills. Students can help identify what skills they know and what skills require instruction.
- Analyze what inquiry skills will be required by a project and what to teach in advance.
- Limit the number of inquiry skills taught within an inquiry activity.
- Determine whether it is appropriate to specify skills for your inquiry activity.

Step 8: How will we monitor and assess inquiry activity?
Before implementing inquiry-based learning activities with students, plan for the monitoring and assessment of the inquiry process and the final product(s). Planning for assessment provides the foundation for thinking about what students already know, what they need to know, what instructional emphases will be given and what students will have learned when the inquiry activity is complete.

- Determine how you will monitor and assess student progress in both content and process on an ongoing basis.
- Determine how you will make students aware of the monitoring and assessment (both formative and summative) requirements.
- Plan for differentiated instruction as the need arises (see Appendix B, p. 92).
- Plan for student self-evaluation.
- Plan for reflecting on the process.
- Plan for evaluating and revising the assignment at the end of the process.
- Determine how you will know if the process has been successful.

Step 9: How will we begin the inquiry?
Introduce the inquiry activity to the class as an integral part of classroom studies.

- Keep a list of questions, issues and problems that arise during the unit for further investigation.
- Spread the inquiry activity throughout the unit so that students have time to think about a topic of interest, talk to parents and other family members, and find a focus.

Step 10: How will we determine what worked?
During and after the inquiry activity, record those strategies that were most and least effective (see Appendix C, p. 93).

Assessing inquiry

Extensive resources to support teachers' assessment work are available from the Alberta Assessment Consortium (1997, 2000, 2003). These resources identify many criteria that improve student learning. In relation to the inquiry process, "Learning is enhanced when:

- assessment strategies match the learner outcomes and are aligned to instruction
- assessment is integrated with instruction (unit and lesson planning)
- assessment relates new concept(s) to previous learning
- students are involved with their own assessment
- students get immediate, meaningful feedback
- students of all abilities are able to demonstrate what they know and what they can do

- assessment engages and motivates students" (Alberta Assessment Consortium, 2000, p. 2).

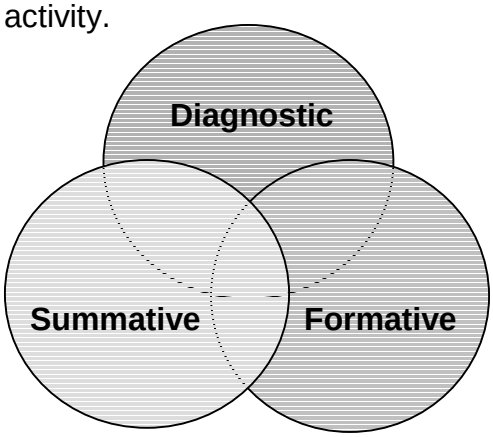
Teachers need to plan for diagnostic, formative and summative assessment when designing inquiry activities.

- **Diagnostic assessment** is used to find out which inquiry skills and strategies students know and can use, and then to build on these strengths during the inquiry. Areas of weakness and difficulty can be targeted for planned instruction during the inquiry activity. Diagnostic assessment also helps teachers recognize when individualized or differentiated instruction may be necessary for certain students in a class.

- **Formative assessment** is critical in the planning for inquiry activities. Inquiry-based learning assessment focuses on the inquiry process to monitor student progress and learning. Ongoing, formative assessment helps teachers to identify the development of students' skills and strategies and to monitor students' planning, retrieving, processing and creating skills during the inquiry activity. This ongoing assessment allows teachers to modify instruction, adapt the inquiry activity and support students with special instructional needs.

- **Summative assessment** is carried out at the end of the inquiry activity to provide information to students and parents about progress and achievement on the inquiry activity. This type of assessment helps the teacher and the students plan for further inquiries. Summative assessment assesses both the content and the process of the inquiry.

Planning for assessment requires that teachers consider the purposes for assessment in the inquiry activity; teachers then choose appropriate assessment strategies for each of the three types of assessment. All three types of assessment are essential to an understanding of what students learn during an inquiry-based learning activity.



Assessment practices should:

- be part of an ongoing process rather than a set of isolated events
- focus on both process and product
- provide opportunities for students to revise their work in order to set goals and improve their learning
- provide a status report on how well students can demonstrate learner outcomes at that time
- be developmentally appropriate, age-appropriate, gender-balanced and consider students' cultural and special needs
- include multiple sources of evidence (formal and informal)
- provide opportunities for students to demonstrate what they know, understand and can do
- involve students in identifying and/or creating criteria
- communicate the criteria used to evaluate student work before students begin tasks so they can plan for success
- be communicated to students so that they understand expectations related to learner outcomes (Alberta Learning, 2003, pp. 7–8).

Also, assessment practices should help and encourage students to:

- be responsible for their own learning
- be involved in establishing criteria for evaluating their products or performances
- work together to learn and achieve outcomes
- feel competent and successful
- set goals for further improvements (Alberta Learning, 2003, p. 8).

Structuring inquiry-based learning activities

The developmental level of the students will have an impact on the nature of an inquiry-based learning activity, the end product and how it is shared. At all levels, appropriate positive feedback and support is necessary for student ownership of the activity.

The following checklists may be useful for teachers who are implementing inquiry-based learning:

For students new to inquiry (usually Kindergarten to Grade 3)

- ❑ Students choose from teacher-selected, concrete topics.
- ❑ Students begin work on the project by relating it to their personal experiences.
- ❑ Teacher provides carefully selected resources, including Internet sites, for students.
- ❑ Students talk to others, using appropriate protocol, to gather information about their topic.
- ❑ Students are specifically taught skills for reading simple informational texts.
- ❑ Students are specifically taught note-taking skills to record their information, using a graphic organizer that is provided by the teacher.
- ❑ Students begin to use technology to locate, organize and create presentations.
- ❑ Students create a basic report or presentation based on specific guidelines.
- ❑ Students share their final report/project with small groups within the classroom and with family.
- ❑ Students talk about their feelings and progress each class.
- ❑ Teacher identifies and shares evaluation criteria for the process and the product.
- ❑ Students can play a role in setting evaluation criteria for the process and the product.
- ❑ Students understand evaluation criteria for the process and the product.
- ❑ Teacher monitors progress at the end of each class.
- ❑ Students talk about what went well and what was challenging.

4

For students with limited inquiry experience (usually Grade 4 to Grade 6)

- ❑ Students, with guidance, select specific topics within a general curriculum theme selected by the teacher.
- ❑ Students work from background knowledge provided by the teacher or their own experiences and build basic understandings of the general curriculum theme.
- ❑ Teacher provides carefully selected resources, including Internet sites, for students and also encourages and supports student searches.
- ❑ Students talk to others, using appropriate protocol, to gather information about their topic.
- ❑ Students are specifically taught skills for reading more complex informational texts.
- ❑ Students are taught basic search engine strategies for the Internet, including how different search engines work.
- ❑ Students begin to use finding guides, such as online library catalogues, online subject directories, keyword and subject searches, indexes, tables of contents, and databases.
- ❑ Students are taught note-taking skills, using graphic organizers provided by the teacher.
- ❑ Students create a basic report or presentation based on specific guidelines. Students are encouraged to be creative in their product.
- ❑ Students use technology to locate graphics and media to enhance their presentations and reports.
- ❑ Students share their final report/project with small groups, with other classes and with family.
- ❑ Teacher identifies and shares evaluation criteria for the process and the product.
- ❑ Students can play a role in setting evaluation criteria for the process and the product.
- ❑ Students understand evaluation criteria for the process and the product.
- ❑ Students learn and apply appropriate peer-evaluation skills.
- ❑ Students talk about their feelings and progress each class.
- ❑ Teacher monitors progress at the end of each class.
- ❑ Students talk about what went well and what was challenging.

For students with more inquiry experience (usually Grade 7 to Grade 9)

- ❑ Students, with guidance, select issues-based topics (arguing for or against or both for and against) within a general curriculum theme selected by the teacher.
- ❑ Students build on their general background understandings of the theme.
- ❑ Students carefully select and evaluate a variety of resources.
- ❑ Students develop in-depth understanding of the topic based on an information retrieval plan.
- ❑ Students work with others to monitor understandings of the topic and sensitivities to the topic.
- ❑ Students are specifically taught skills for reading and evaluating complex informational texts.
- ❑ Students use finding guides appropriately.
- ❑ Students use the Internet, with guidance and instruction from the teacher.
- ❑ Students are specifically taught interviewing skills that consider the appropriate protocol for each situation.
- ❑ Teacher provides a choice of notes or graphic organizers for students to record information.
- ❑ Students are specifically taught note-taking skills, including highlighting techniques.
- ❑ Teacher assists students in modifying and adapting their topics.
- ❑ Students create a report or presentation based on guidelines provided in the planning phase and in response to the needs and interests of the intended audience.
- ❑ Students use technology appropriately to enhance their presentations and reports.
- ❑ Students share the final report/project with larger groups, with other classes, in the community and/or with family.
- ❑ Teacher identifies and shares evaluation criteria for the process and the product.
- ❑ Students can play a role in setting evaluation criteria for the process and the product.
- ❑ Students understand evaluation criteria for the process and the product.
- ❑ Students learn and apply appropriate peer-evaluation skills.
- ❑ Students share their feelings and progress each class.
- ❑ Teacher monitors progress at the end of each class.
- ❑ Students talk about what went well and what was challenging.

4

For students who are advanced inquirers (usually Grade 10 to Grade 12)

- ❑ Students select specific topics (e.g., issues-based, cultural, comparative, informative, historical, current events, biographical) within parameters set by the teacher.
- ❑ Students develop and support a position or point of view for thesis-based inquiry, which may involve social action that meets community standards.
- ❑ Students build on their general background understandings of their topic to develop an in-depth understanding of the topic, based on their own information retrieval and processing plan.
- ❑ Students carefully select and evaluate a variety of resources.
- ❑ Students work with others to monitor understandings of the topic and sensitivities to the topic.
- ❑ Students are specifically taught, as needed, skills for reading and evaluating complex informational texts.
- ❑ Students use finding guides appropriately.
- ❑ Students use the Internet, with guidance and instruction.
- ❑ Students conduct interviews in an appropriate and ethical manner (including consideration of privacy and confidentiality).
- ❑ Students record information using the most appropriate note-taking strategies.
- ❑ Students create a report or presentation based on guidelines developed in the planning phase and in response to the needs and interests of the intended audience.
- ❑ Students use technology appropriately and creatively to enhance their presentations and reports.
- ❑ Students share their final report/project with larger groups, with other classes, in the community and/or with family.
- ❑ Teacher identifies and shares evaluation criteria for the process and the product.
- ❑ Students are involved in setting evaluation criteria for the process and the product.
- ❑ Students provide appropriate self-evaluation and peer evaluation of the final product and the inquiry process.
- ❑ Students monitor and adapt their own inquiry skills and strategies during the process.
- ❑ Students share their feelings and progress each class.
- ❑ Teacher monitors progress at the end of each class.
- ❑ Students talk about what went well and what was challenging.

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A comprehensive list of references for integrated, inquiry-based learning
Compiled by Kath Murdoch

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L**ittle Books of Big Ideas** (Curriculum Corporation)
A useful series of very practical, accessible books is available from Curriculum Corporation, Melbourne, Australia. These books support many specific aspects of inquiry- particularly the associated skills. Some useful titles are:
How to Succeed with Thinking (Jeni Wilson and Kath Murdoch)
How to Succeed with learner-centred assessment (Wilson and Murdoch)
How to Succeed wit Questioning – Robyn English and Jeni Wilson
How to Succeed with Coopertive Learning – Kath Murdoch and Jeni Wilson
How to Succeed with Creating a Learning Community - Kath Murdoch and Jeni Wilson

Great Resources for Prep-2 play based Inquiry
Cadwell, L. Bringing Learning to Life. Teachers College Press
Reggio Children: Everything has a shadow expect Ants (Reggio Emilia Publishing)
Jabion, J. The Power of Observation, Teaching Strategies
Katz, Lillian. Engaging Children;s Minds: the project Approach, Ablex Publishing Association

Just Imagine
Just Investigate
Just Improvise
Just Discover
(All published by Tertiary press) EXCELLENT ideas for discovery centres

Curtis, Deb. Designs for Living and learning, redleaf Press

(All these resources are available through the Lady Gowrie Centre's online book shop):
www.gowrie-melbourne.com.au/bookshop