

The ingenuity of questioning



Kathy Saville

IBAP regional conference

Friday 26 March 2010



- How come, when you bend over, your eyes don't fall out?
- Do trees ever stop growing?
- Why do we scream when we are scared?



**The important thing is not to stop
questioning**

- Albert Einstein

- **CONNECT** – How are the ideas and information presented **CONNECTED** to what you already know?



- **EXTEND** – What new ideas did you get that **EXTENDED** or pushed your thinking in a new direction?

- **CHALLENGE** – What is still **CHALLENGING** or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?



What is the ingenuity
of questioning?

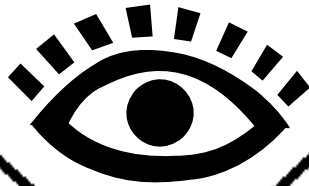
Session overview



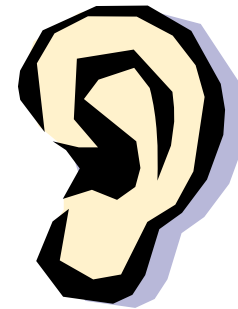
- Definitions
- Challenges of questioning in school systems past, present and future
- Types of questioning
- What makes a good question
- Through a PYP lens

- What behaviours are associated with a classroom culture that values questioning?
- What does it look like, sound like, feel like?
- Y chart

Looks like



Feels like



Sounds like

Human ingenuity



...dealing with the way in which human minds have influenced the world, for example, the way we are, think, interact with each other, create, find solutions to and cause problems, transform ideas and rationalise thought. It also considers the consequences of human thought and action.



He that questioneth much shall learn much, and content much; but especially if he apply his questions to the skill of the person whom he asketh; for he shall give them occasion to please themselves in speaking and himself shall continually gather knowledge...

Sir Francis Bacon (1561-1626)



We never stop investigating. We are never satisfied that we know enough to get by. Every question we answer leads on to another question. This has become the greatest survival trick of our species.

Desmond Morris

Questions and questioning

- Are pivotal to learning how to learn and becoming a lifelong learner
- Allow us to make sense of the world and to take action
- Are the most powerful tools we have for making decisions and solving problems, for inventing, changing and improving our life, as well as the lives of others
- Are central to learning and growing. An unquestioning mind is one condemned to feeding on the ideas and solutions of others
- Enable us to make changes in life, to invent new and better ways of doing things
- Support informed decision making



Pink Floyd
Another Brick in the Wall

We don't need no education

We don't need no thought control.



The test of a good teacher is not how many questions he can ask his pupils that they can answer readily, but how many questions he inspires them to ask which he finds it hard to answer.

Alice Wellington Rollins



Once you have learned how to ask relevant and appropriate questions, you have learned how to learn and no one can keep you from learning whatever you want or need to know.

Neil Postman and Charles Weingartner
Teaching as a subversive activity

Prime questions



- **Why** – Why do things happen the way they do?
 - Cause and effect - the favourite question of 4 year olds - the basic tool for figuring things out
- **How** – How could things be made better?
 - Problem solving and synthesis
- **Which** – Which do I select?
 - Requires thoughtful decision making, reasoned choice

Types of questions

- Higher order
- Lower order
- Closed
- Open
- Overt
- Covert
- Polar
- Branching
- Confrontation
- Key
- Critical
- Following
- Clarifying
- Evaluating
- Silly
- 'Stupid'
- Deductive
- Inductive
- Creative
- Educative/productive
- Freeing
- Hypothetical
- Divergent
- Recall
- Research
- Social
- Reflective
- Opening
- Leading
- Ambiguous
- Double-barelled
- Unanswerable

How do you elicit a good question?

- Give waiting time
- Use key words: How, why, when, who, what
- Use an appropriate level of language
- Be controversial and challenging
- Use strategies to ask questions – eg de Bono's Six Hats
- Rephrase questions in different ways

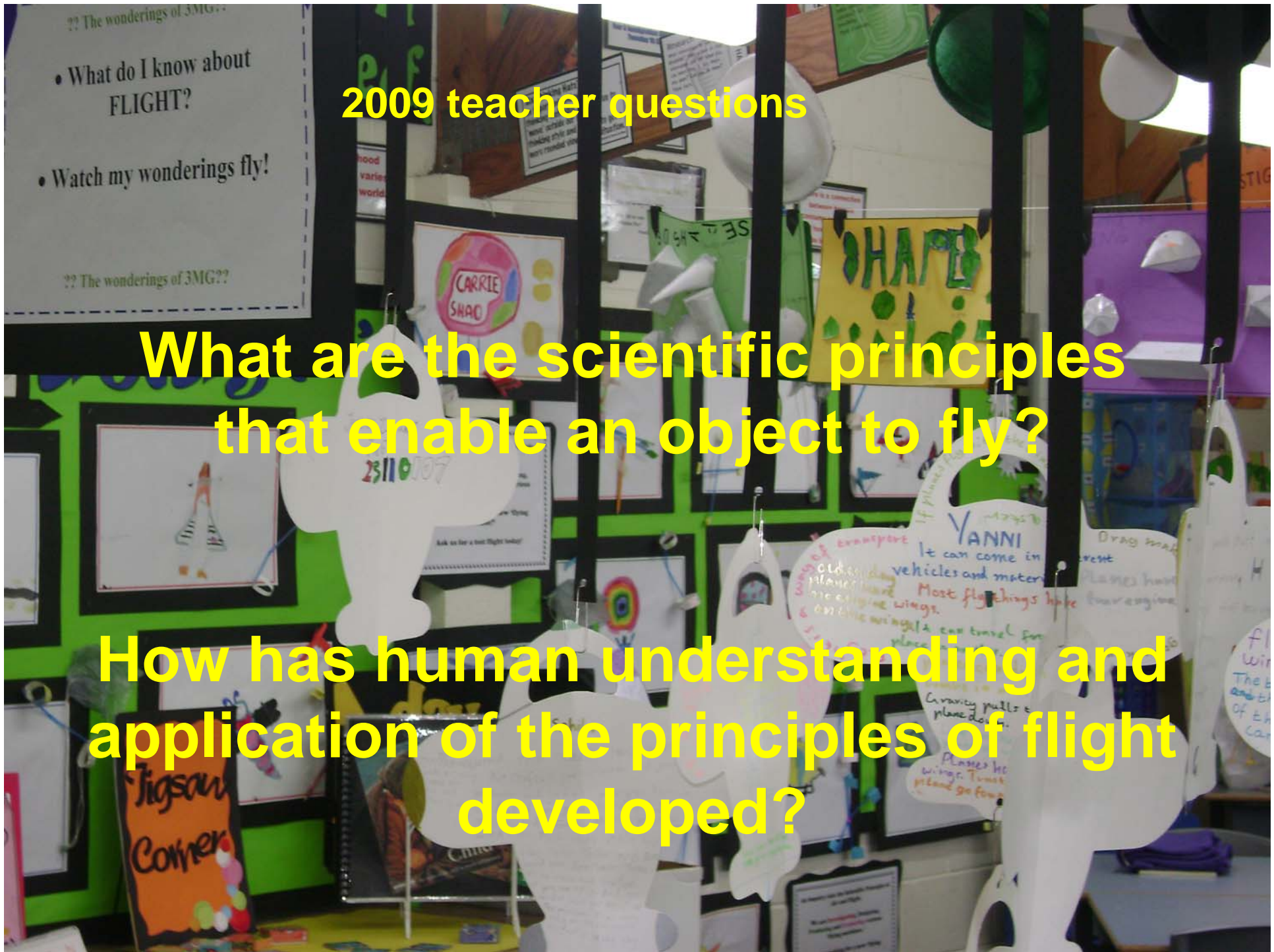
2005 teacher questions

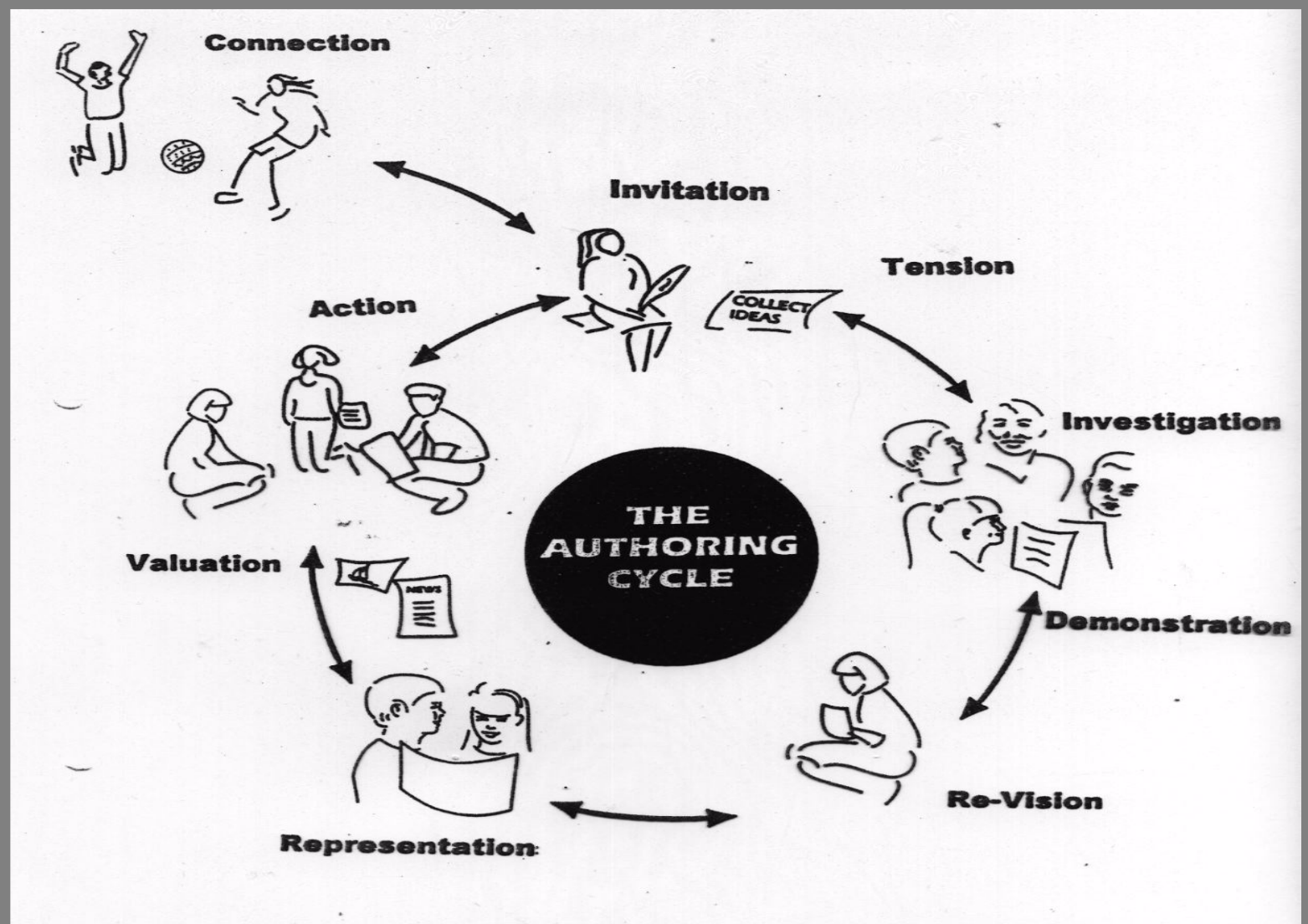
- What are the four forces needed for flight?
- Why has man been fascinated with flight and how is this represented in literature, modern and ancient?
- Describe the historical development of flight?
- Can you identify the cause/effect relationship on the features that assist an object to fly in birds, planes, balloons, kites, helicopters and gliders?
- What does it feel like to soar like a bird?

2009 teacher questions

What are the scientific principles that enable an object to fly?

How has human understanding and application of the principles of flight developed?





The Inquiry Cycle

Links to standards and practices



Standard A1.6 (Philosophy)

- The school promotes student inquiry and the development of critical-thinking skills

Standard C1.8 (Written curriculum)

- The curriculum provides ample opportunity for student inquiry and the presentation of ideas

Standard C3.11 PYP (Teaching and learning)

- Teaching at the school uses inquiry across the curriculum, and by all the teachers

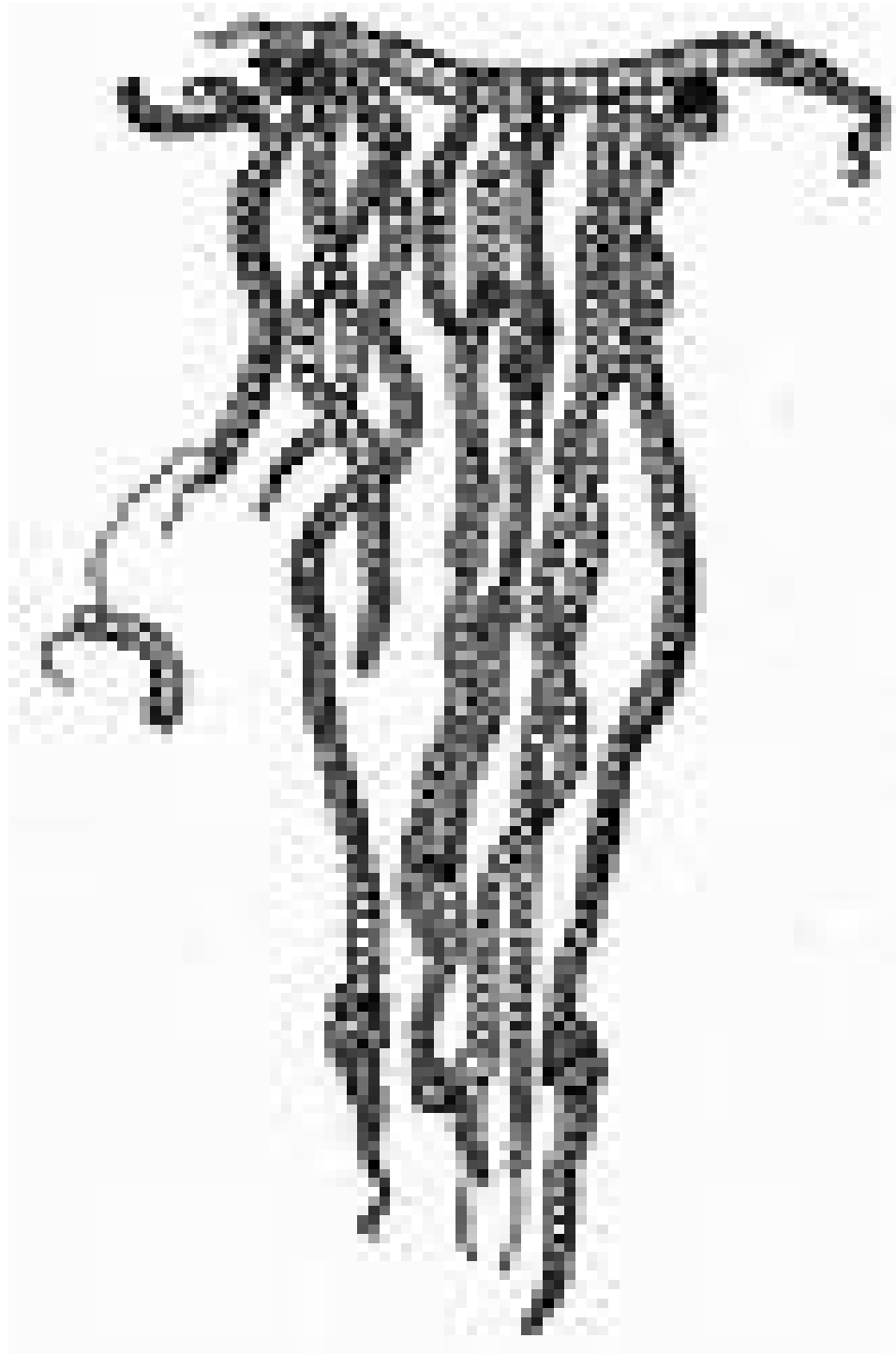


- While curious young children ask why things are the way they are, many older children ask only, “Will it be on the test?”
- “Why?” is the most frequent question in kindergarten classes and least frequent in high schools

Encouraging student questioning



- Using artefacts to pose questions
- Immersion through wandering and wondering
- Problem solving v problem posing
- Using primary source material
- Using prior knowledge
- Teachers professional development to develop better questioning in their students



Problem based learning with artefacts



- Each person at the table to take a different lens to view artefact – mathematician, archaeologist, scientist, artist, historian, other...
- Two minutes of own thinking and jotting down of ideas
- Share with others at table



- Use the picture of an artefact to observe, think and question

- In **observing**, use all of your senses to describe what you see in objective terms. Avoid drawing premature conclusions



- **Think** and relate – what do these observations make you think of? Identify related prior knowledge. Make some tentative conclusions
- Generate some **questions** – what are you curious about and why?



Mrs MacKenzie





What connections can you make between Ancient Egyptian writing systems and our writing system today?

How do buildings of Ancient Egypt compare to our modern structures?

WHAT WAS LIFE LIKE IN ANCIENT EGYPT?

THE EGYPTIAN NEWS
BOY KING MURDERED?

ANCIENT EGYPT

PHARAOHS VILLAINS AND THIEVES

ANCIENT EGYPT

SCIENCE IN ANCIENT EGYPT

PYRAMIDS

CLEOPATRA

Egyptian Treasures

ANCIENT EGYPTIANS

ANCIENT EGYPT

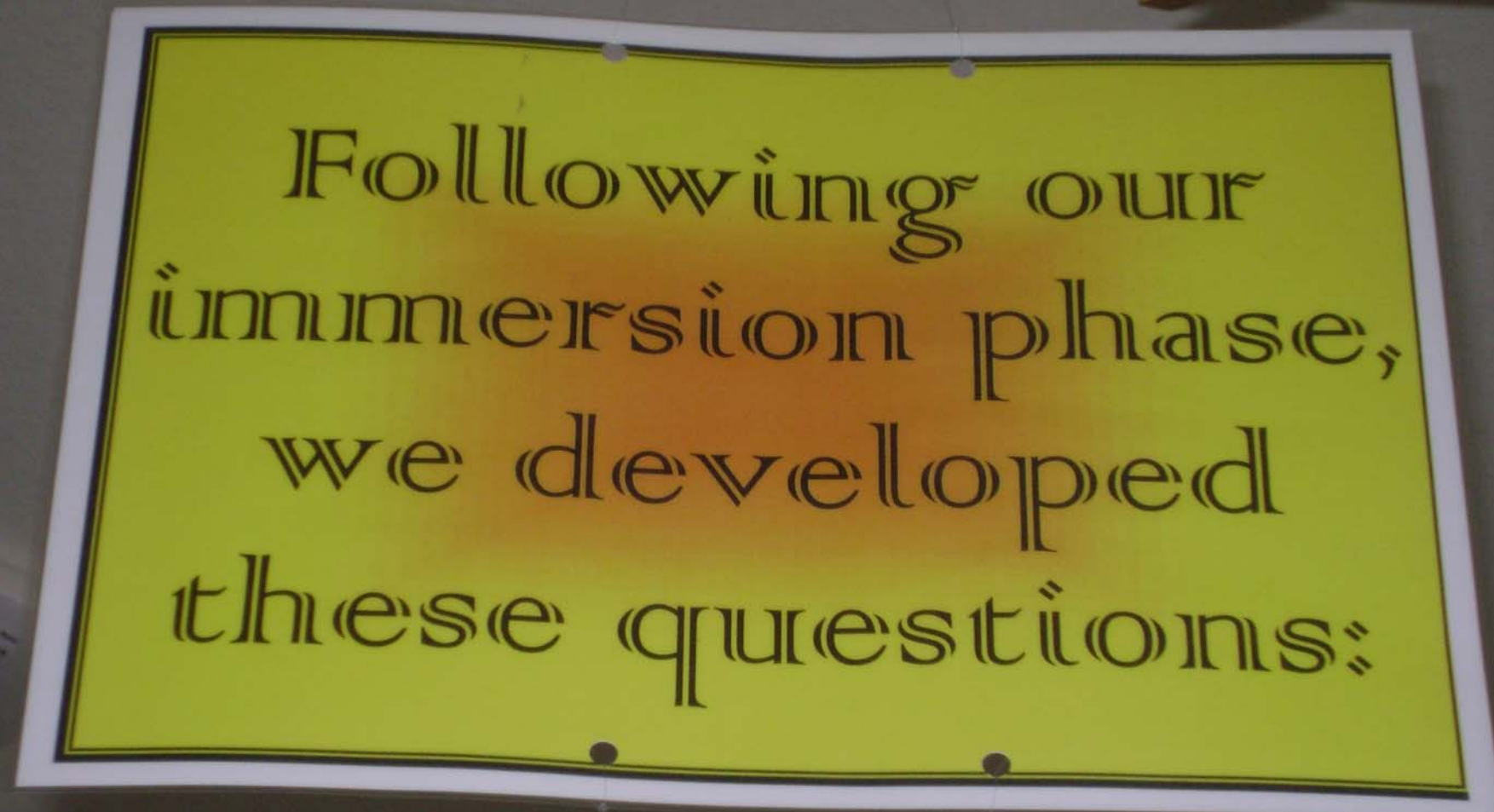
ANCIENT EGYPT

ANCIENT EGYPT

ANCIENT EGYPT

ANCIENT EGYPT

ANCIENT EGYPT



Following our
immersion phase,
we developed
these questions:



Why weren't women treated with equal rights in Ancient Greece? Ruby

What Aztec customs and beliefs are still used today? Eric

Did the slaves in Ancient Egypt ever rebel? Maddy

Are the animal heads on Egyptian Gods real or are they masks? If yes, why do they wear them? Shala and Carla

Why were so many Ancient Civilisations found in Ancient Iraq? What did these Ancient Civilisations develop? Jacob

How did the Age of the Greeks decline? Henry

How did technology change the Olympics from when it first started to today? Brook



- **CONNECT** – How are the ideas and information presented **CONNECTED** to what you already know?



- **EXTEND** – What new ideas did you get that **EXTENDED** or pushed your thinking in a new direction?

- **CHALLENGE** – What is still **CHALLENGING** or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?



Perhaps real wisdom lies in not seeking answers at all. Any answer we find will not be true for long. An answer is a place where we can fall asleep as life moves past us to its next question. After all these years I have begun to wonder if the secret of living well is not in having all the answers, but in pursuing unanswerable questions in good company.

Rachel Naomi Remen