Thinking routines

Segues to learning

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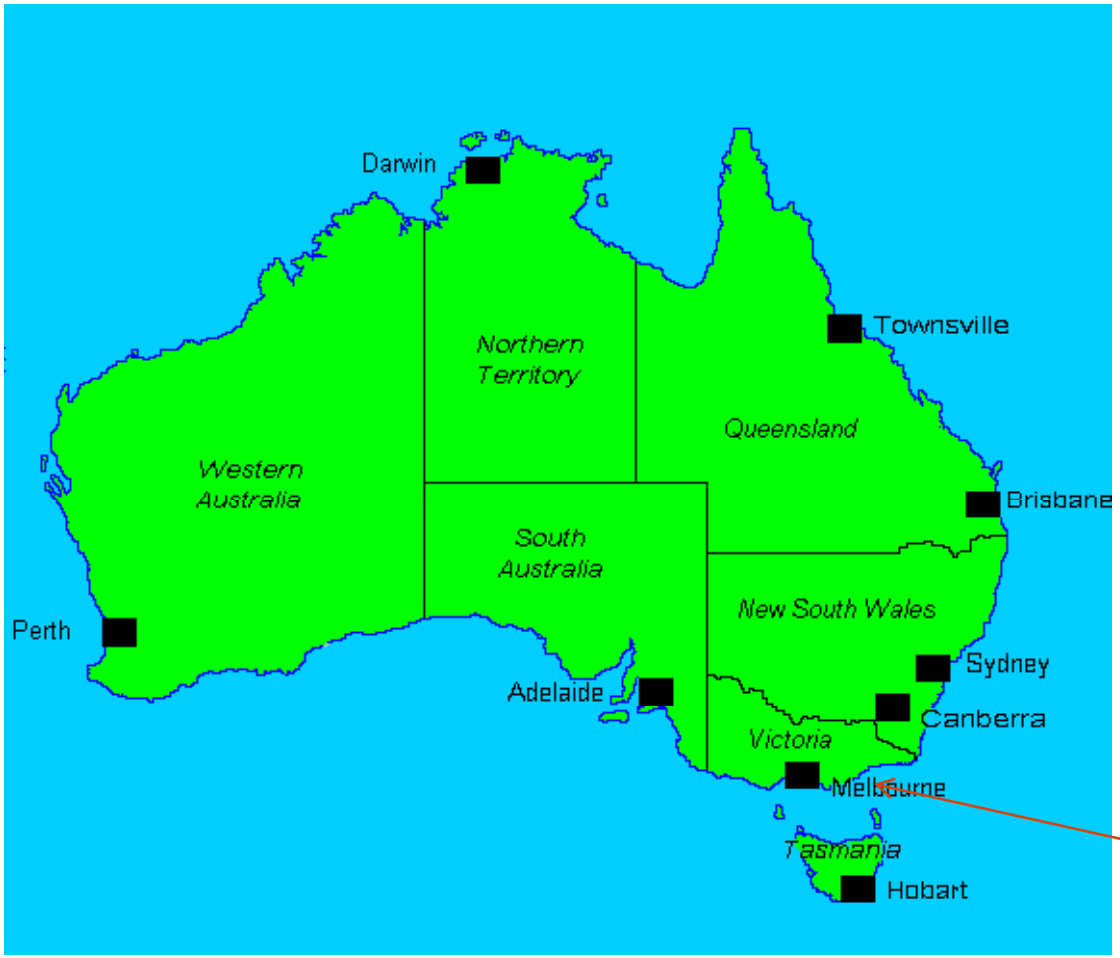

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Visible Thinking

http://www.pz.harvard.edu/vt

Visible Thinking has a duel goal:
- To cultivate students' thinking skills and dispositions
- To deepen content learning.

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VISIBLE THINKING

Menu Bar

Purpose and Goals

Visible Thinking is a flexible and systematic research-based approach to integrating the development of students' thinking with content learning across subject matters. An extensive and adaptable collection of practices, Visible Thinking has a double goal: on the one hand, to cultivate students' thinking skills and dispositions, and, on the other, to deepen content learning. By thinking dispositions, we mean curiosity, concern for truth and understanding, a creative mindset, not just being skilled but also alert to thinking and learning opportunities and eager to take them

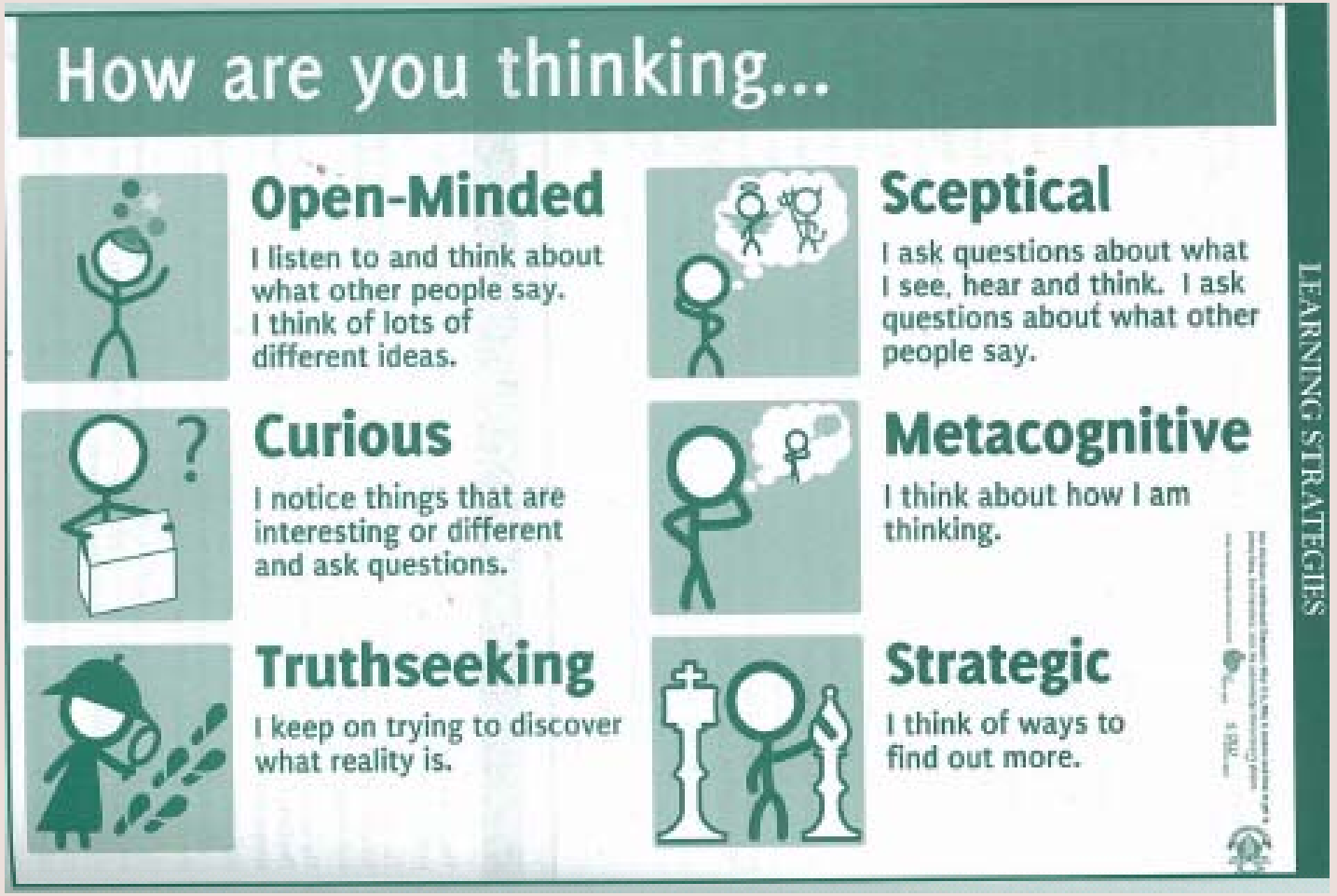
Who is it for?

Visible Thinking is for teachers, school leaders and administrators in K - 12 schools who want to encourage the development of a culture of thinking in their classrooms and schools.

Key Features and Practices

At the core of Visible Thinking are practices that help make thinking visible: *Thinking Routines* loosely guide learners' thought processes and encourage active processing. They are short, easy-to-learn mini-strategies that extend and deepen students' thinking and become part of the fabric of everyday classroom life. *Thinking Ideals* are easily accessible concepts capturing naturally occurring goals, strivings or interests that often propel our thinking. Four Ideals -- Understanding, Truth, Fairness and Creativity -- are presented as modules on this site. There are associated routines for each ideal and within each module there are activities that help deepen students' concepts around the ideal.

Thinking dispositions



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Open-minded

- Being flexible,
- willing to consider and try out new ideas,
- generating alternative options and explanations
- looking beyond the given and expected.
- active rather than a passive process.

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Curious

- Curiosity isn't an end in itself but the beginning of a process of discovery or problem solving.
- We value curiosity for where it can take us.

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Metacognitive

Effective learners tend to :

- actively monitor,
- regulate,
- evaluate,
- and direct their thinking.

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Truth-seeking

By asking students why they think what they do or what is behind their beliefs or opinions, we can begin to engage them in a search for truth and understanding.

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Sceptical

- Being sceptical means probing below the surface of things, looking for proof and evidence, and not accepting things at face value.

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Strategic

- Our task and our thinking become clearer when we clarify our goals and consider ways to reach them.

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Thinking routines

Thinking routines focus on the establishment of structures that weave thinking into the fabric of the classroom and help to make the thinking of everyone in the classroom more visible and apparent.
(Perkins, 2004)

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Thinking routines

- are explicit
- have only a few steps
- are flexible in nature
- are instrumental in nature
- get used repeatedly
- group or individual use

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- The goal of a routine is to provide structure that engages students deeply with content, fosters their understanding, and uncovers their thinking in the process

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Thinking ideals

- Understanding
- Fairness
- Truth
- Creativity

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Your turn!

- Think
  - What do you think you know about this topic?
- Puzzle
  - What questions or puzzles do you have?
- Explore
  - What does the topic make you want to explore?

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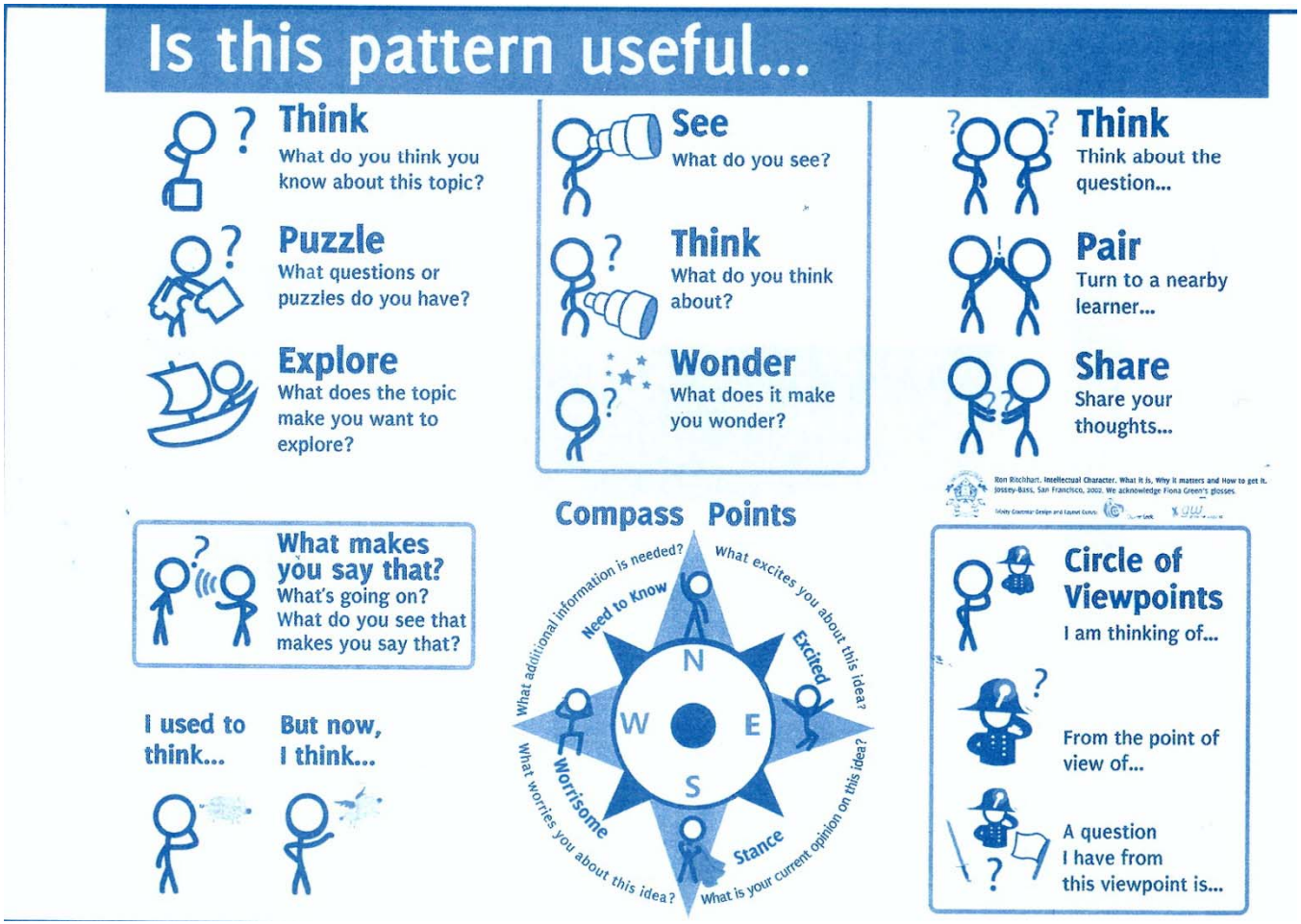
Core Routines



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Classroom display boards

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Understanding Routines

- Connect Extend Challenge
- Explanation Game
- Headlines
- Question Starts
- Think Pair Share
- Think Puzzle Explore
- What makes you say that?

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Understanding Routines

- 3-2-1 Bridge
- Colour, Symbol, Image
- Generate, Sort, Connect, Elaborate
- Peel the Fruit

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Fairness Routines

- Circle of Viewpoints
- Here Now There Then
- Making it fair: Now Then Later
- Reporter's Notebook
- Tug of War

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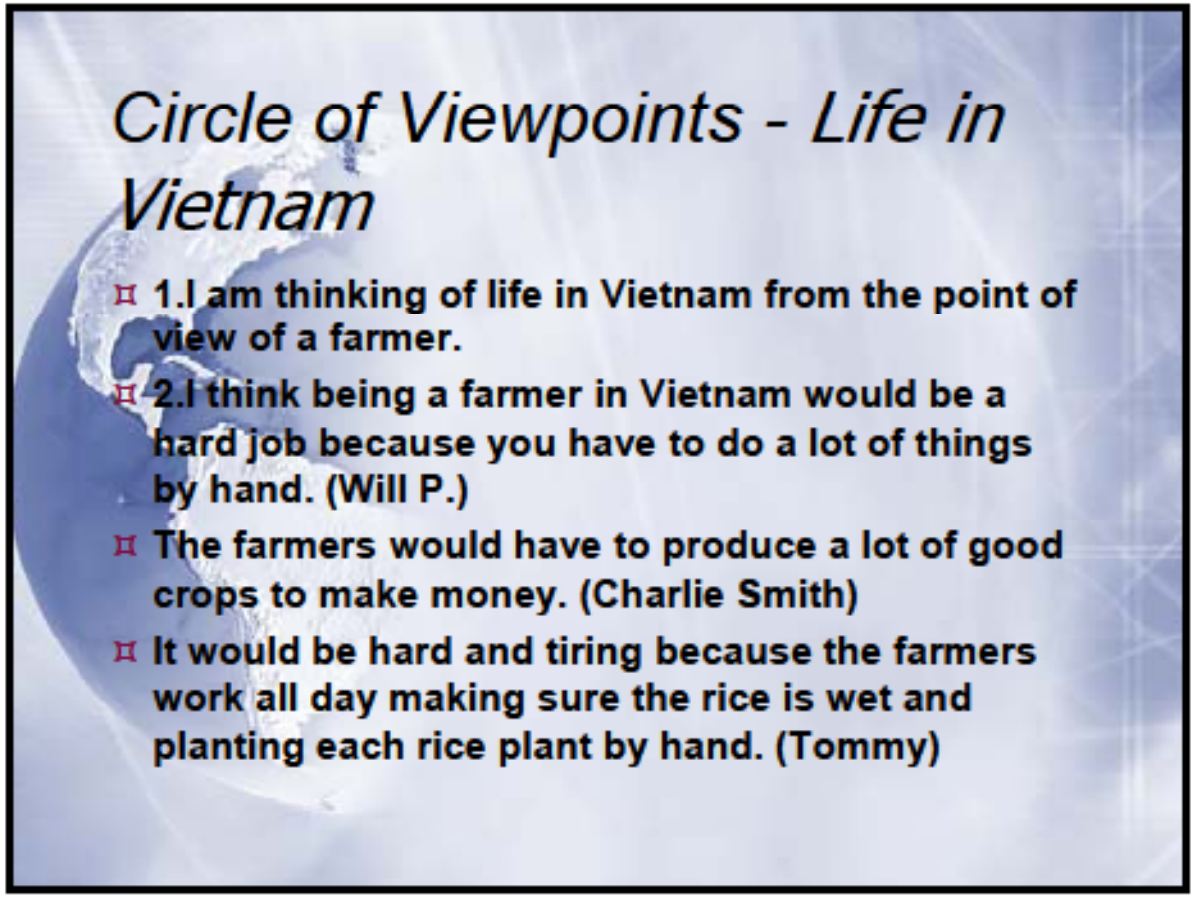
Circle of viewpoints



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Circle of viewpoints

Consider the transition from Primary school to Secondary school

- I am thinking of the transition from the viewpoint of ……..
- I think
- A question I have from this viewpoint is

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Truth Routines

- Claim Support Question
- Hot Spots
- Stop Look Listen
- True for Who?
- Tug for truth
- Red Light, Yellow Light

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Creativity Routines

- Creative Hunt
- Creative Questions
- Does it fit?
- Options Diamond
- Options Explosion
- Step Inside: Perceive, Know, Care About

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Using the routines in the classroom

Mathematics

Science

Other subjects

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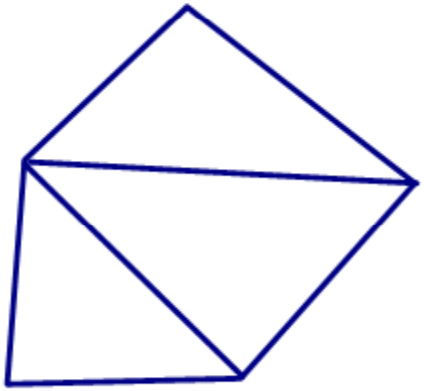
See, think wonder

What do you see?



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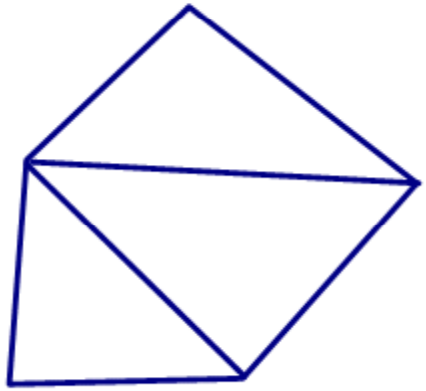
What do you think about?



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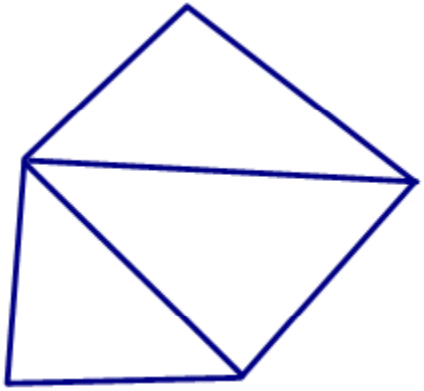
What does it make you wonder?



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(2+3) x 4 2+ (3 x 4)

- What do you see?
- What does it make you think about?
- What does it make you wonder?

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What's going on?
What makes you say that?

1
1
2
3
5
8
13
21
34
55
89
144
233

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In science

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Student responses

What did you see?

Round balls – some liquid some powder

Piece of equipment

2 1/2 connected spherco + cord

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What did you think?

it would heat up

it looks weird and it will be mixed
it might explode
what is its purpose?
its unusual
it could be for filtering
it looks interesting and it looks like water

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What did it make you wonder?

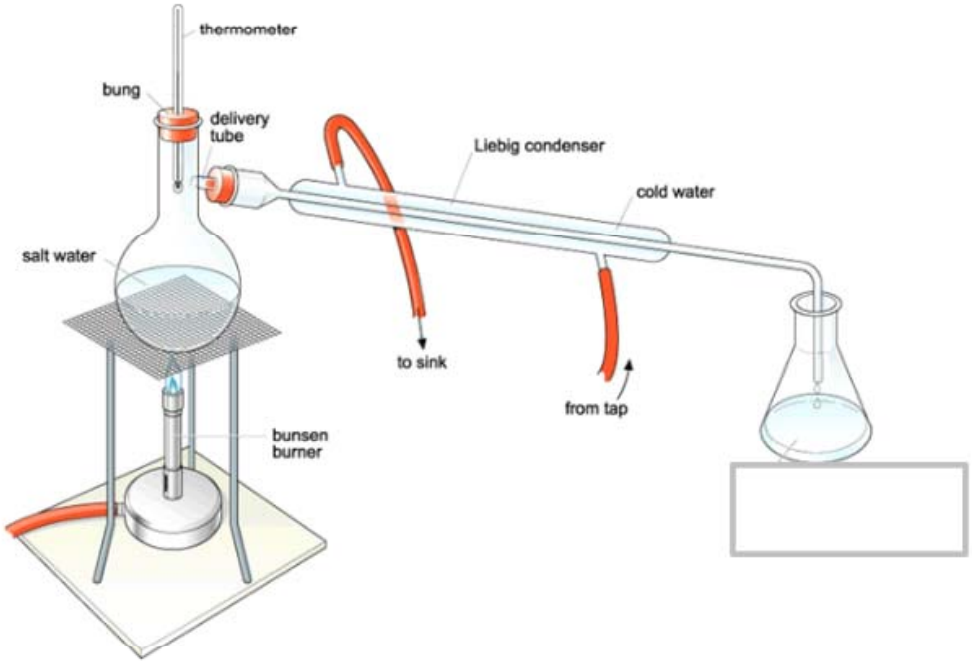
- who would use it?
- what does it do?
- how does it work?
- does it make a noise?
- does it need another machine to make it work.

Lesson 1 Year 7 Science

What do you see?

What do you think?

What does it make you wonder?



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What does it make you wonder?

- What does it do?
- How does it work?
- What is the thermometer for?
- Can it help people?
- What does each bit do?
- Where was it made?

Year 10 Chemistry

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See

2 clear liquids ⟶ yellow solid (ppt)

reaction — colour

produced a solid

Think :-

a chemical reaction occurred

Heat was released ??

How did it change colour?

Wonder How long did the reaction take?

Why the colour change?

What were the 2 chemicals

Why did it go solid?

Is there liquid there? – Why some solid and some liquid

Can you change it back?

If heated – would it be quicker?

Do the volumes of each matter?

What is the yellow solid?

Could you stop the reaction with another liquid??

After this routine:

Boys had a clear purpose for the experiment on precipitation reactions.

The boys were focussed, they worked quietly and efficiently, and were eager to begin the analysis of their results.

The boys wanted to learn how to interpret the solubility tables available in the senior chemistry laboratory.

I had a record of the lesson – a valuable resource for my reflections.

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3 routines- 1 picture

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What's going on?
What do you see that makes you say that?


What do you think you know about this topic?
What questions or puzzles do you have?
What does this topic make you want to explore?


What do you see?
What do you think about this?
What does it make you wonder?

My reflections -

A very quiet working class after this routine had been done.

Class was quiet and thoughtful during the routine . Think pair share was used- ideas were shared with those immediately around them before pooling the ideas of all the class.

By the nature of the picture, the first question had many common answers.

Questions 2 & 3 elicited much greater variety.

The boys listened carefully to the different questions others wondered about.

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Looking back- reflecting

Thinking routines

Relatively easy to include into regular classroom lessons

Provide opportunities for student expression

Help students get into a ‘learning mindset’

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- I used to think- now I think

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