



Learner and Teacher Agency

CONCEPT DEVELOPMENT: *Science*

Quote: 'The most beautiful thing we can experience is the mysterious. It is the source of all true art and science'. Albert Einstein

Definition

Concept Development encourages participants to explore and clarify their understandings of concepts.

Purpose

Using critical and creative thinking skills, and employing a range of learning modalities, participants will explore the concept of *Science* through a series of guided thinking tasks

Process:

1. Divide workshop participants into groups of 4, and issue cartridge paper and textas. Ask groups to select a leader, a recorder, a reporter and an encourager.
2. Have groups fold the paper in half (portrait), number the pages (1-4) and write their names at the bottom of p. 1
3. On page 1, ask participants to work together to create a diagram that represents *Science*. (Visual Thinking)
4. On page 2, ask participants to generate 20 things that they associate with *Science*. (Creative Thinking) To prepare for this, have participants write the numbers 1-20 down the Left-hand margin, so that the whole page is filled up.
5. On page 3, ask participants to list 20 things that they do not associate with *Science*. As for Step 2.
6. In the top half of page 4, ask participants to write the following sentence:

Science is like and animal (of your choice)

because

a,

b.

c.



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(Creative Thinking: Analogical thinking: Forced relationships)

7. In the bottom half of page 4, ask students to complete the following:

SCIENCE is _____

(Critical Thinking: Defining)

8. Reporting back: Have each group show and explain their diagram on page 1, their analogies on page 4 and their definition of *Science* on page 4. Insist that each group is applauded. Work can be published during the workshop, so that everyone has a chance to read pages 2 and 3. A further activity could be refining all the definitions into one definition or developing a set of generalisations about the concept

Metacognitive Moment: How scientific do you consider yourself to be?

References: This activity is based on *Attribute Web Analysis* (Robin Fogarty: 1996) and *Concept Development* (Professor Joyce Van Tassel-Baska 1999)

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