

**Discovery Learning** theory is a model of inquiry-based teaching and learning, with a constructivist philosophy. It takes the form of problem solving, drawing on the students' existing knowledge and experience to discover new relationships and truths. Students respond to questions and controversies, so they have greater ownership through the learning process and are able to better remember their personalized outcomes.

**Guided Discovery** is one teaching and learning model that is based on discovery learning. The teacher takes a facilitation role and stimulates inquiry through questioning. The result of this student centered questioning not only stimulates student thought, it can also help to modify their responses. This leads to a better understanding and students making meaning of their actions within the wider context.

**Water Safety**, by definition is based on experience and the combined development of physical skills and critical thinking to ensure safer participation in a range of aquatic environments. The critical thinking component is based upon decision making and each decision, if acted upon, can have a real consequence. The teaching of water safety has a dual purpose to:

1. Increase knowledge, skills and create attitudes that should lead to safer behaviours around water
2. Create an understanding of what to do if something goes wrong.

Open questions can be asked during both classroom and practical lessons. However, for Year 1 and 2 students it may be better to only question in the classroom after each practical session. The water may be too cold for the very young and they may not be able to cope with thinking about safety while learning physical skills.

Examples of questions to stimulate thinking and foster inquiry are shown below:

Why do we change for swimming?  
Why should we swim with a buddy?  
Why do we need pool rules?  
What are our pool rules?  
How do we float flat?  
Why is it important to learn to float?  
What and where is the rip current?  
How does a rip work?

What is sculling? When would it be good to use sculling?  
What does it feel like to swim in clothes?  
What is the difference between swimming in a pool and the sea?  
What are the potential dangers when we swim in the sea?  
Who needs to wear a lifejacket?

Other ways of stimulating thinking may include the use of:

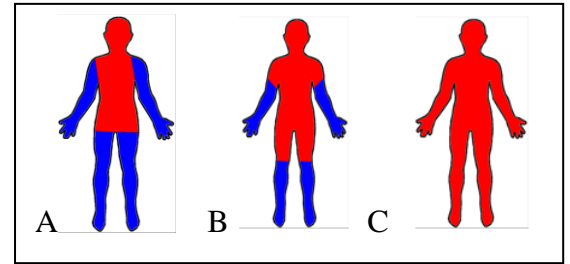
- De Bono's Thinking Hats
- Thinkers Keys
- Bloom's Taxonomy
- Graphic organisers
- Decision making
- Action planning

Both classroom and pool activities can be taught with an inquiry focus, for two examples see over page.

**Hypothermia** can be taught in a practical way in the classroom. The temperature of the fingers or under the armpits of students can be measured using a thermometer to ascertain normal body temperature. Buckets or bowls of ice or water at various temperatures, up to tropical sea water

temperature of about 30°C can be prepared. Children can then place their hands in the water for a set time and then be asked to do a simple manipulation task, such as zip and clip a lifejacket, tie shoe laces or write a message and put it in a sealed bottle or just retake their finger temperature.

Questions can be asked relating to coordination of the hands and fingers after a time in the ice or very cold water. Why was it harder to tie your shoelaces? If your hands stayed in the ice for longer what colour would they go? Why? What do you think happened to the blood in your fingers? If your whole body was in the very cold water how would you feel after one hour, after three hours? Which picture would represent these feelings? Why? If you started to swim what could happen to your core body temperature? For further information see Teacher Guide Cold Water Immersion and Hypothermia.



Many water safety skills can be taught 'dry' first. This not only maximises pool time, but it lends itself to the guided discovery approach away from the water when the students can think about the implications and consequences of their actions in an easier environment.

### **Huddle position** (dry teaching)

Once the theory of hypothermia is understood students should learn the practical skills (e.g. huddle position) that help to prolong life in cold water.

*For teacher information: Huddle Position as in WAI Survival:*

- Huddle reduces body cooling as less of body is exposed to cold water
- Form a huddle in groups of 4 or 5
- Arms around waist, not shoulders, arm pits closed not open for decreased heat loss
- Head out of water
- Legs intertwined – staying still
- Ensure minimal water in middle of huddle
- Reassure each other.

This position may invade personal space and so some students need reminding of the context/scenario - your boat capsized and sank and you and your mates are in the sea (wearing your lifejackets) but you can see no land at all. This is where the teacher can facilitate learning through questions so that the correct technique is learned and understood.

Example Questions:

- Look around at everyone's huddle - why are some different? Which is better and why?
- If arms are on someone's shoulders what is likely to happen to them? How do we prevent this from happening?
- Why is it important to keep your elbows close to your body?
- Then ask about the physical closeness of the huddle group. How much water is there between everyone? What does this water do? What can we do about it to keep us all warmer?
- What would you do if you had a small child/a very cold friend/someone without a lifejacket/or everyone in the group bar one person wearing a hat? Why?
- If there are two huddles in the water close to each other is it best to stay as two groups or merge into one group? Why?

