

Free resources

Picture for talk



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Fig. 1

A picture can be a very good stimulus for children to engage in effective talk in science.

Using pictures is an inclusive approach which facilitates high levels of participation. Pictures can also be used as a starting point for enquiry. The discussions the children have will generate questions that they want to investigate.

Asking the children carefully chosen questions about the picture will support them with learning to:

- Construct explanations and link their ideas with evidence
- Make confident challenges to the ideas of others
- Explore scientific terminology and use it with genuine understanding

Pictures for talk in science activities are designed to be very open ended and usable with children of any age. The activities can be done as a quick ten-minute starter, or extended into a longer and more in-depth lesson.



What to do

Download the image in fig.1 by following the link and either display on a whiteboard or give out printed copies. Ask the children to discuss, in groups of three, the following questions:

What can you see in the picture that is living?

What can you see in the picture that is non-living?

What can you see in the picture that is natural?

Can you find anything in the picture that is made by humans?



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Fig. 2

Other questions to generate and promote thinking and explaining

- Do you think that a material can be both natural and human-made?
- Why do you think the metal is in the water?
- How do you think the metal has changed since entering the water?
- What changes might occur over time to other things you can see in the picture?
- What do the living things need to survive?
- Can you think of benefits to placing materials into the sea that would not usually be found there? What might be the issues?

Natural materials come from animals, plants and from the ground. Materials from the ground include stones, metals and minerals, including the salt dissolved in the water, along with others such as soil or clay. Materials that can be extracted from these are sometimes considered to be natural too, but human intervention may be required to turn them into usable materials.

For example, an animal skin needs to be processed to become leather – the leather is considered by some to be a natural material whilst others argue that it is human-made. Cotton must be spun by a human-made machine to create the threads necessary to produce clothing – but the material is not changed in any other way.

Steel is made from two natural materials – iron and carbon. However, these materials need to undergo a reaction in order to produce the steel, which has different properties to iron; it is harder and stronger. Therefore steel is human-made.

Iron or steel may also be introduced to the ocean to support structures – as seen in the image. Some creatures can live on the structures and a new habitat may form, supporting numerous living things. Artificial reefs are sometimes built specifically to create habitats for marine life, and these may be made by sinking objects such as old oil rigs or be purpose built from PVC (plastic) or concrete.

Through a process called 'iron fertilisation', iron is sometimes introduced to oceans to encourage the growth of phytoplankton, microscopic organisms that can photosynthesise (make their own food) and so form the base of many food chains in the oceans. Scientists do not all agree on whether iron fertilisation is a good thing to do. Some scientists argue that the phytoplankton take up carbon (from carbon dioxide) and take this to the ocean floor, removing it from the atmosphere. As increasing carbon dioxide in the atmosphere is a major cause of climate change, this process could be beneficial. Others argue that there may be unintended consequences of introducing too much iron to the oceans.

Download the image in fig. 2 and ask the children to discuss:

- What similarities and differences can you see in this image compared to figure 1?
- How do you think the fish survive in the fish tank when the plants are all artificial?