Free resources

Picture for talk

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Figure 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 inquiry. 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 are igloos made from?

Where do you think these igloos have been built?

Why do you think this?

Do you think anyone lives in them? Explain your ideas

The igloos are situated on Lake Shikaribetsu, a freshwater lake in the Daisetsuzan National Park, Japan. This is located at an altitude of 810m and is one of Japan's coldest regions. The lake generally freezes between December and May. The village that is built, and usually open for use from January to March, includes the igloo lodges that can be used overnight, a concert hall, chapel and bar, all made entirely from ice and snow.

From May, pleasure boats are used on the lake.

Other questions to generate and promote thinking and explaining

- Why does the village have to be rebuilt each year?
- What would you expect to happen to the igloos during the different seasons?
- What changes might occur as the temperature increases? (Think about seasonal changes, not just changes of state.) Where does the heat come from to make temperatures rise?

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Figure 2

- How might climate change affect the village?
- What would be the highest temperature the ice and snow can reach before starting to melt?
- If you were at that frozen lake, what would you wear and why?
- How does clothing keep us warm?

A common misconception is that clothing generates heat, which is not the case. Encourage children to think about their body heat (internally, around 37°C) and how this can be trapped inside clothing to keep the body warm. Clothing acts as an insulator – a material that does not allow heat to pass through it easily.

Snow and ice also act as insulation. So if there is warmth inside an igloo, it can be retained within the building. Warmth might be provided by various heat sources and from bodies that stay inside. There may be some melting of the ice on the inside of the walls if temperatures rise above 0°C, but the thick ice will take a long time to melt, as it has good insulating properties. 0°C is a lot warmer than the outside temperature throughout the winter and the igloos will also protect people from winds, which can be even colder.

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

- How do you think people can survive in these temperatures and stay overnight in the buildings?
- What materials were chosen for the seat cushions? Why do you think the cushions might be needed?
- What materials would you choose for cushions and other soft furnishings in an igloo? Why would you choose these?