



E6



10-15 minutes

SOLID – LIQUID



To know about solids and liquids
To observe and compare different substances



- ❖ Images of lakes in summer and winter from E4



- ❖ Images of water in liquid form in the environment



- ❖ A picture of big waves in the ocean



- ❖ A picture of floating icebergs



- ❖ A plate with a stone and a large ice cube on it (for each child)
- ❖ A glass of milk and a glass of water (for each child)
- ❖ A large bowl of water and a large ice cube
- ❖ A teddy
- ❖ Drawing materials



Introduction:

Set up Teddy to listen and watch. Show your child the pictures of the landscapes in summer and in winter from E4 again, and remind them of ideas discussed in the previous sessions (winter/summer, ice/water and cold/warm). Ask them to name the seasons represented in the pictures.

Ask them if winter turns straight into summer; if they do not tell you that winter becomes spring and spring becomes summer, remind them. Ask what they remember about the weather in spring; establish that spring is similar to both winter and summer. It can be cold, but that the weather gradually becomes warmer. Make the point that everything gets warmer in spring.

Ask which season follows spring, and then ask which season follows summer. Talk about the weather in autumn. Establish that autumn is similar to both summer and winter. It can be warm in autumn, but gradually the weather grows colder. Talk about the weather in winter. Contrast the warmth of summer with the snow and ice of winter.

Solids and Liquids:

Talk about the properties of ice from previous sessions – how it is cold and hard – and tell your child that they are going to take a closer look at ice.

Give your child a plate with a stone and a cube of ice on it. Ask them to examine the ice and the stone and to tell you about the similarities and differences between them. Help them as necessary to identify these points:

- You can knock on the table with both, as both are hard – they are called ‘solids’.
- The stone has colour e.g. white, grey or black, and you cannot see your fingers through it as it is opaque.
- You can see your fingers through the ice, as the ice is transparent.

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Your child can say if a liquid or solid is transparent (water/ice) or opaque (milk/stone).
Your child can say if a substance is liquid or solid.
Your child can name places where water may be found in the environment.





SOLID – LIQUID – continued



Put the plate with the stone and the ice to one side, and give your child a glass of milk and a glass of water. Encourage them to examine the milk and the water, and ask your child to tell you the similarities and differences between them.

Ask them if they can see through the milk and the water, and then explain why – that water is transparent but milk is not; it is opaque.

Take the ice again and ask your child to compare it to the water. Talk to them about the differences between the feel of water and the feel of ice – establish that they can pick up the ice with their fingers, and they can knock with it, but they cannot pick up a ‘piece’ of water as their fingers go through it. Explain that this is because water is a liquid whereas ice is a solid.

Ask your child what other examples of liquids and solids they can think of, for example soup, juice, wood, stone and so on.

Help your child to focus on the contrasts, for example that ice is cold but water is not, ice is hard/solid but water is liquid.

Ask them where they can see water outdoors in liquid form (when it rains, in ponds, rivers, streams, waterfalls, fountains, bird baths, the sea, condensation and so on) and show them the pictures provided.

Then show the picture of the sea with big waves, and explain that where there is a lot of water we get waves, mostly caused by the wind. Demonstrate waves in a large bowl of water.

Then put a large piece of ice into the water. Ask them what they notice and establish that the ice does not sink, it floats. Show the picture of the icebergs in the sea too and discuss how they also float. Remind them again: *ice is cold and hard, a solid, and water is a liquid.*

Review:

To recap and check their understanding, do a short quiz with Teddy playing along too. Go in turn between Teddy and your child, and have Teddy get confused and give some incorrect answers.

Start by saying: *Of the substances we’ve looked at today:*

- 1) *Which two are transparent? (water and ice)*
- 2) *Which two are opaque? (milk and stone)*
- 3) *Which two are liquids? (water and milk)*
- 4) *Which two are solids? (ice and stone)*
- 5) *Can you name some other liquids?*
- 6) *Can you name some other solids?*

You could end the session by asking your child to draw some ice floating in waves of water.





