

| Key Stage/Task Type | Hands-on | Paper-based | Talking and Thinking - no resources needed! |
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| EYFS (Preschool and Reception) | Have a go at making ice shapes. Try filling different containers (plastic is safest) with water. Where could you put them if you wanted to make ice? What has happened to the liquid water? How can you get the liquid water back again? | Make your own weather chart. Write the days of the week on a piece of paper, then each day draw and/ or write what the weather was like. How many different types of weather did you get during the week? What weather is your favourite? Why? | What clothes would you choose to wear on a very cold day? Why? Would you choose different clothes on a hot day? What clues does our body give us when we feel too hot or too cold? |
| KS1 (Years 1 and 2) | <u>Ice Escape Investigation</u> - Predict what will happen if you place a small toy and some water in an empty yogurt pot in the freezer. How will you free the trapped toy? https://www.twinkl.co.uk/resource/t2-s-135-changing-state-s-ice-water-steam-worksheet | https://www.twinkl.co.uk/resource/t2-s-135-changing-state-s-ice-water-steam-worksheet Can you draw and write captions to show what happens to liquid water that is left outside on a very cold night? What would happen the next day if it was sunny and warm again? | Can you think of ways to stop a cup of water freezing when it is left outside on a very cold night? Think about the things that keep you warm when it is cold and use what you know to make suggestions. Where in the world do you think it would be important to know how to stop water freezing? |
| Lower KS2 (Years 3 and 4) | <u>Ice Tower Challenge</u> - exploring changes of state using ice. How tall a structure can you build with cubes or pieces of ice? Is it an ideal building material? Why? https://explorify.wellcome.ac.uk/en/activities/problem-solvers/ice-block-skyscraper | Record your ideas...what materials would you use to stop an ice-cube or ice-lolly from melting? How can you insulate your lolly to stop it absorbing heat from the environment? Draw and label your ideas, showing your protective design. What is it | Can you talk about some of the differences and changes you see when substances are heated up or cooled down? Think about things you have seen cooking, baking, or freezing at home or school. What changes or does not change? Does it just depend on the substance? |

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| | | made from? Does it cover the whole cube or lolly? Why do you think it will work? Are your ideas predictions or do you have evidence that it will work? | The process it is going through? Both? |
| Upper KS2 (Years 5 and 6) | https://explorify.wellcome.ac.uk/en/activities/odd-one-out/big-hitters Take a look at the three images - they are all related, yet different. There are no right or wrong answers...but you need to decide which is the Odd One Out, and give a reason for your choice. | <u>Changes of State</u> - Heating and cooling to change state. Reversible and Irreversible changes. https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Aasc%3AUS%3A253643a5-2958-446f-9b03-c5e5871244d5 Have you made a new substance? | Does the mass of a block of ice affect how quickly it will melt? Why do you think that? Is there a pattern? |