GOD IS TRUTH

States of matter

Term 4

Year 3

Thinking Skills

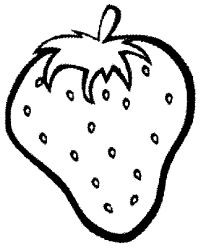
Year 3 Truth

Creative cooking 1 Create an ice-cream making machine using milk, ice, and sugar. Draw your invention.	**Creative cooking 2** Your bar of chocolate is melting and turning to liquid. Think of 3 ways to stop it melting.
Creative cooking 3 You have 3 ingredients: A liquid (water) A solid (sugar) A gas (air) Name and describe what you will make.	**Creative cooking 4** Invent a delicious type of tea made from hot water and some kind of plant.
Creative cooking 5 Invent a recipe using 3 edible solids.	**Creative cooking 6** Invent a delicious drink using 3 liquids.

Solids, Liquids and Gases
The Basics

Properties of Solids, Liquids and Gases.

Solids

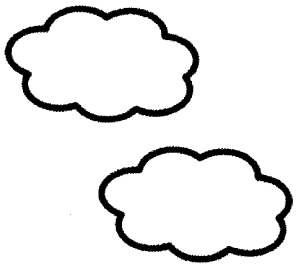


1. Do not change shape
2. Particles are really close together
3. Particles move very slowly
4. Has fixed volumes

Liquids

1. Takes the shape of their containers
2. There is some space between particles
3. The particles move at a medium speed sometimes bouncing off each other
4. Has fixed volumes

Gases



1. Hard to contain with no shape
2. Lots of space between particles
3. Particles move very slow rarely bouncing off of each other
4. Have no volume

Draw up a table and write the answers in your book:

Solids, Liquids and Gases

A **solid** has a definite shape. A **gas** does not have a definite shape. A **liquid** does not have a definite shape.

In the list below, state whether it's a solid, liquid or gas and if it can change states or not and how.

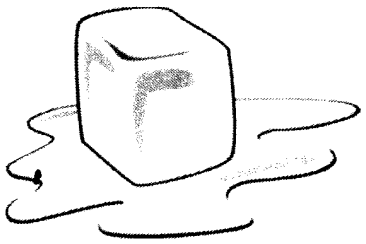
Item	Solid, Liquid, or Gas	Change Y/N	How
Water			
Milk			
Paint			
Butter			
Soda (fizzy drink)			
Chocolate			
Air			
Cake			

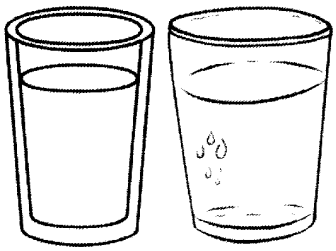
Copy the sentences into your book, filling out the missing word in each sentence.

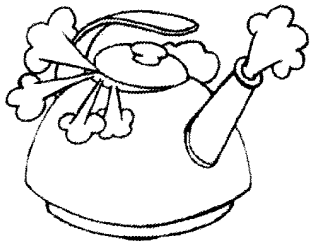
Name:

Changes of State in Water

Solid **Liquid** **Gas**







Freezes Melts Condensation Evaporates Vapor

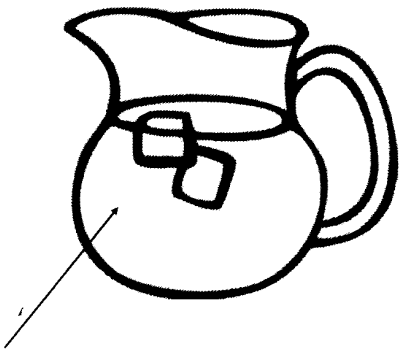
Finish the sentences using the words above:

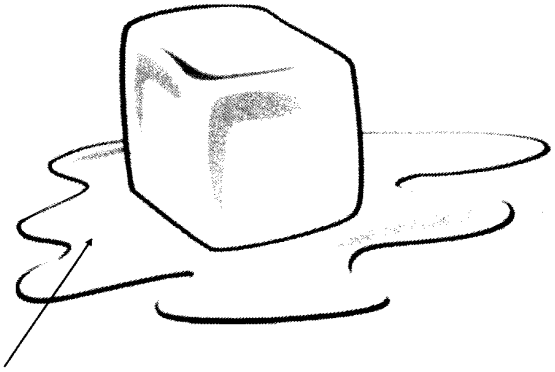
- Water changes to _____ with heat.
- Water becomes a solid when it _____.
- Water _____ when it is heated.
- Water forms _____ when it is cold.
- Ice (water) will change to liquid when it _____.
- Frozen water is a _____.
- Tap water is a _____.
- Evaporated water is a_____.
- The 3 states of water are:_____

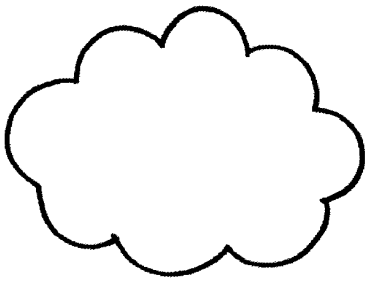
First draw these pictures in your book.

Matter

Under each picture of matter, print if it is a **solid**, **liquid** or **gas:**







Copy into your book and finish the sentences.

What is Matter?

1. The three states of matter are:

2. Two states of matter you can see are:

3. The state of matter that is hard to see is:

4. The state of matter that is hard to touch is:

5. The two states of matter you can feel are:

6. Name one matter that changes state:

7. Everything is made of:

Matter all around us

Draw each picture in your book and describe the matter.

What does it look like? (colour, size, shape)

How does it feel? (rough, smooth, light, hard)

What does it do?

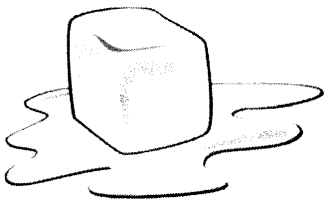
Can you taste it? How does it taste?

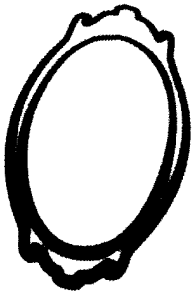
Explain the change

How does a soft egg become hard?

How does water become ice?

How does vapour form on a mirror?





Heating and Cooling

You now know that heating and cooling can change objects.

Some changes can be reversed, which means the object can go back to the way it was before it was heated up or cooled down.

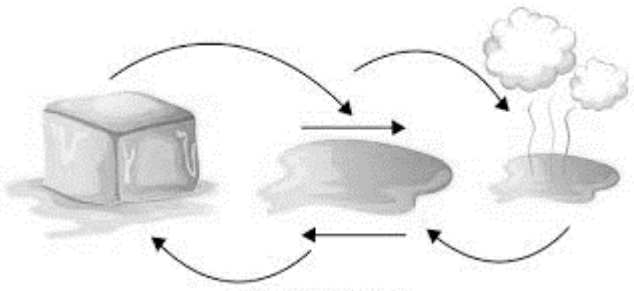
Other changes cannot be reversed, which means the object cannot go back to how it was before it was heated up or cooled down.

Water can go through reversible changes when it is heated or cooled.

When water is heated up, it will start to boil, and then turn into water vapor.

If you collect the water vapor and cool it down, it will turn back into water.

When water is cooled down a lot, it will turn into ice. If you heat the ice back up, it will turn into water again.



Have you ever watched an adult cook an egg? Eggs go through a change that cannot be reversed when they are heated. When the liquid egg white is heated, it turns into a solid. If you let the egg cool back down, though, the egg white will not turn back into a liquid.

Questions:

1. What does it mean if a change can be reversed?

2. There are changes that cannot be reversed? Give an example.

3. Describe how heating and cooling water changes it.

4. Can you think of another object that goes through a change that cannot be reversed when it is heated or cooled? Describe the change.

Solids, Liquids and Gases
Test questions

1. What are the three states of matter?

2. Which of these have a fixed shape.

3. Which of these take the shape of their container?

4. What happens to some solids at high temperatures?

5. What can some liquids do at very low temperatures?

6. Name two states of matter you can always see.

7. Which of the these can change their shape by flowing?

8. Which liquid can take the form of solid, liquid or gas, depending on the temperature?

Answers:

1. There are three states of matter: solid, liquid and gas.
2. Solids have a fixed shape.
3. Liquids take the shape of their container.
4. Some solids can melt and become liquids.
5. Liquids freeze at low temperatures and become solids.
6. Two states of matter you can see are liquids and solids.
7. Liquids can change their shape by flowing.
8. Depending on the temperature water can exist in the form of a solid, liquid or gas.