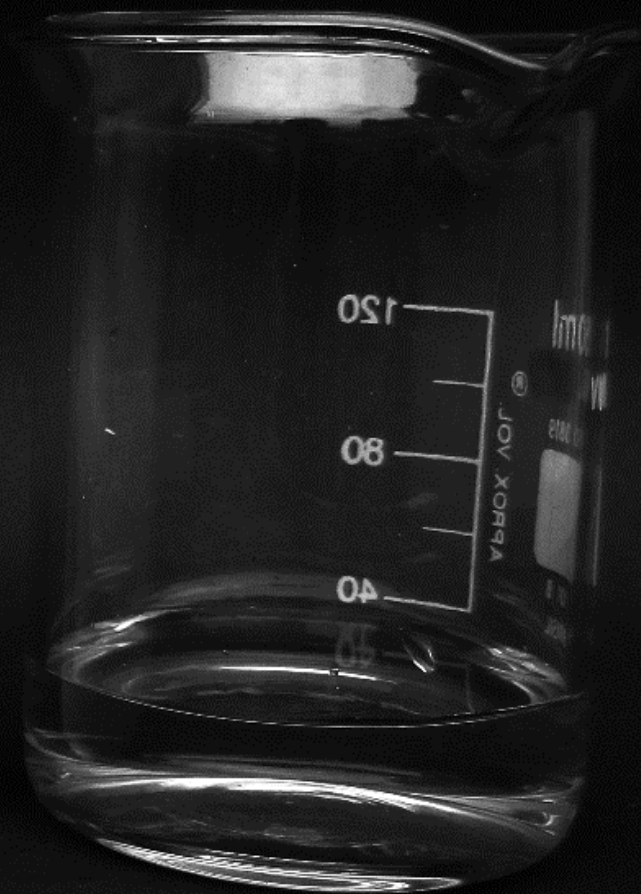


Physical and chemical changes

YEAR 5

AUTUMN 2



LESSON FOUR

What is the difference between physical and chemical changes?



Do Now – Retrieval practice

1) What is a chemical change?

A chemical change has taken place when _____
_____.

2) Give an example of a situation when a chemical change is taking place

3) What are three signs that a chemical reaction could be taking place?

i. _____

ii. _____

iii. _____

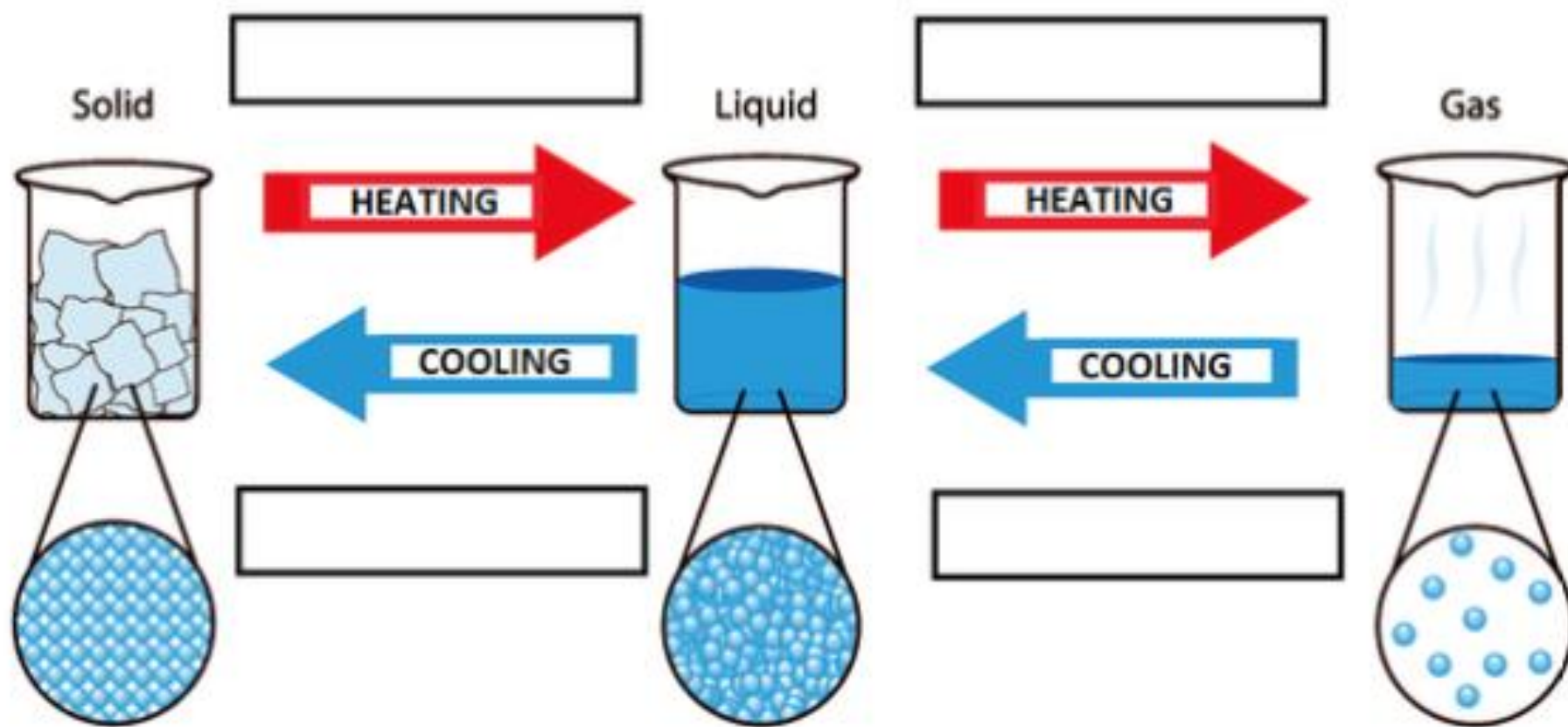
4) What are products and reactants?

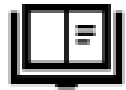
_____ are the substances you have before a chemical reaction

_____ are the substances you have after a chemical reaction

From previous topics:

5) Write in the correct words to describe each change of state in the 4 boxes below:



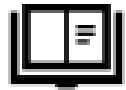


Read the following passage about physical and chemical changes

Physical and chemical changes have many similarities and many differences. In both cases, the substance that you have after the change will look different to the ones that you started with. For example when ice turns into water, it will look different when it is ice compared to when it is water. As an example of a chemical change, when firewood is burned to create ash, the wood looks completely different to the ash.



What will be true for both physical and chemical changes?

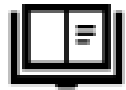


Read the following passage about physical and chemical changes

In both changes you will have the same amount of matter at the beginning as you do at the end. Sometimes you cannot see this if some of the matter has become a gas but it is still there. For example, when water boils to steam we cannot see all the particles any more. When firewood burns to become ash some gases are produced as well that we cannot see.



Why can't we always see some of the matter afterwards?

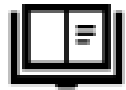


Read the following passage about physical and chemical changes

However there are clear differences between physical and chemical changes. In a chemical reaction, the substance that is produced is a completely new substance. It is also often very difficult to reverse the chemical change. For example, ash is a completely new substance to firewood and it would be very difficult to change ash back into firewood.



What can we say about the substance produced in a chemical change? _____



Read the following passage about physical and chemical changes

In a physical change, the substance that is produced is the same substance as before, it is just in another form. It is normally easy to reverse the change that has taken place. For example, when ice is melted to become water, it is still the same substance, just in a different form. All we have to do is cool the water down enough and it will turn back into ice again.



What can we say about the substance produced in a chemical change? _____

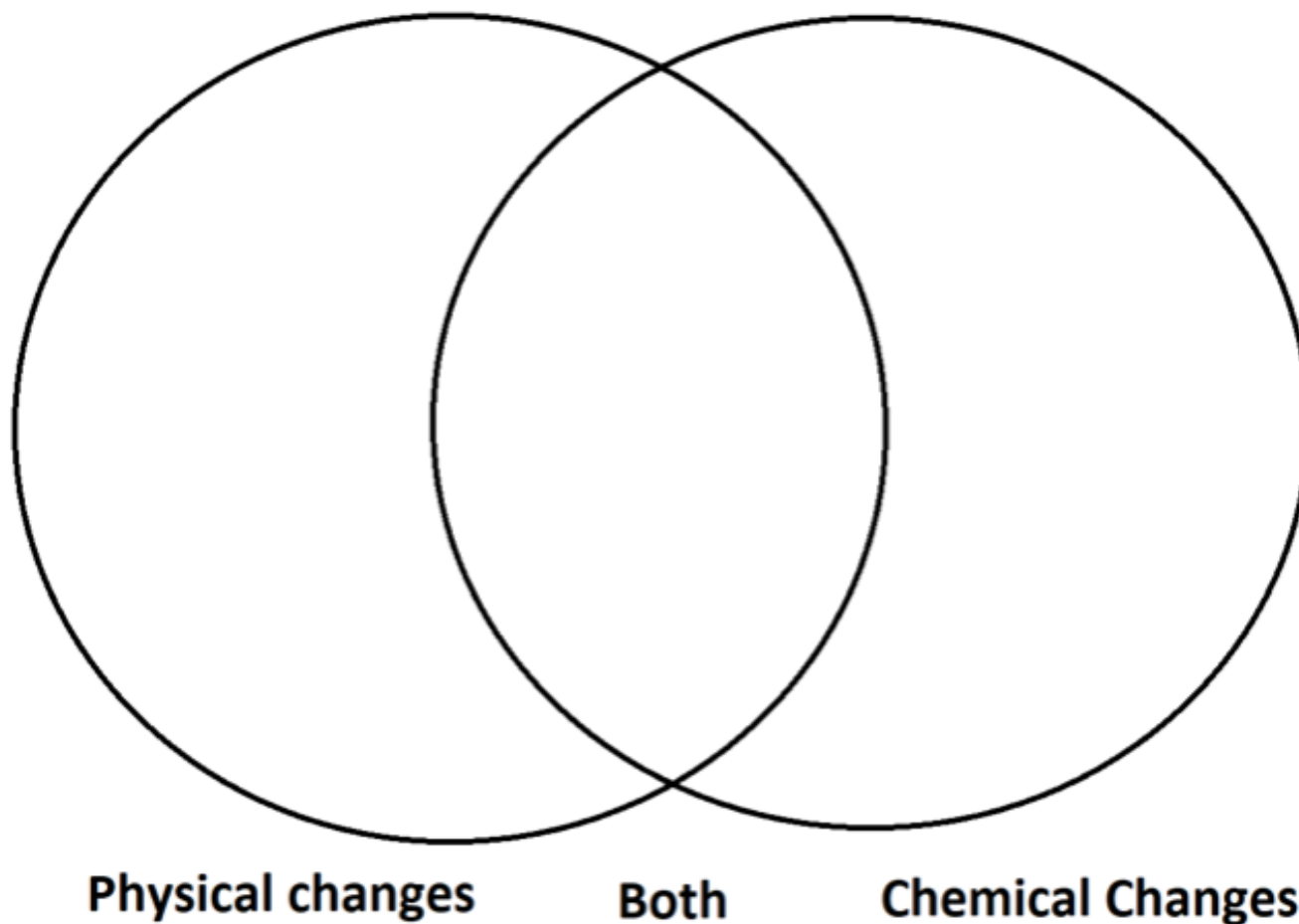


Watch the video (<https://www.youtube.com/watch?v=ANotoVBazDU>) with the sound off – can you work out if each change is a physical change or a chemical change?



Place each sentence in the correct part of the Venn diagram below:

- a new substance is produced
- the same substance changes form
- there is a change in appearance
- difficult to reverse
- easy to reverse





For each of the following examples, write down if you think they are a physical or a chemical change and why:

1) Making toast is a _____ change because _____

2) A puddle evaporating is a _____ change because _____

3) A firework exploding is a _____ change because _____

4) Rain turning to snow is a _____ change because _____

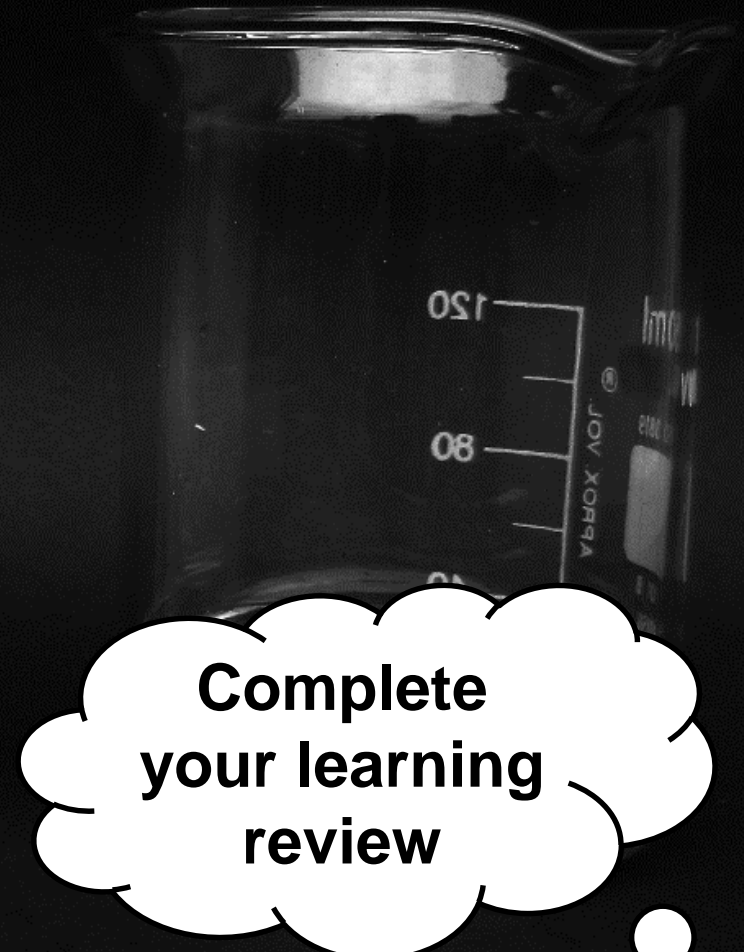


When metal is left outside and begins to rust, is this a physical change or a chemical change?

Physical and chemical changes

YEAR 5

AUTUMN 2



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