IN BRIEF

Weighing the Elephant is a fable about using cleverness and careful measurements to solve a problem! This pack encourages students to do the same, with various activities related to the units we use to measure things...



1. LITERACY LESSON IDEAS

- In this issue, there are stories that contain words or phrases that your students might not have encountered yet. Don't worry! The **Storytime Glossary** is here to help – children can look up the definitions there.

- Units of measurement are useful tools that we use to quantify things in the world around us. The **Class Discussion Sheet** asks questions about which units students use in their everyday lives – this should get them thinking about how useful measurements are!

- The **Reading Comprehension Sheet** has an extract from 'Weighing the Elephant' that includes a *comparative adjective*, an *alliteration*, and two *similes*. Can your pupils find them all and complete the comparison sentences?

- The events from this month's fable have been jumbled up on the **Story Sequencing Sheet**. Can your students work out the order they should be in? They should number the sections from 1 to 11.

- The **Storyboard** page asks pupils to retell the tale of the elephant and the emperor's son in their own words. The illustrations on the sheet will remind them about key events in the story that they should include.

Continued on page 2...

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2. HISTORY LESSON IDEAS

- Humans have been measuring things for many thousands of years... in fact, units of measurement have been around for as long as human civilization! The **Measurements in History** page is full of facts about how people measured things in the past. There are also questions that ask children to think about what it would have been like to *use* these units!

- More than two hundred years ago, scholars and scientists attempted to come up with a logical system of measurements, and the **Magic of Metric!** sheet tells students all about it! They will find out about the main units, the prefixes that can be used to scale them up and down, and some other metric measurements they might not have heard about.

3. MATHS LESSON IDEAS

- **Metric Maths** challenges students to work out the correct prefixes for various metric measurements. Do they know their *kilo-* from their *pico-*, and can they choose the right units to measure the objects at the bottom of the page?

- The emperor and his advisors are asking all sorts of questions about the elephant on the **How Do You Measure It?** sheet. Students must select an appropriate measurement and tool to provide the answer.

- The **Colour by Size!** page combines measurement with colouring in! Students should use a ruler to work out the length of the sides of various shapes and colour them in according to the key on the sheet.

- Maths and poetry combine on the **Unit Poem** page! Many of the units mentioned in it are Imperial, so there is a brief discussion of this system – and there are also statements that kids should complete by looking up metric equivalents to Imperial units.

- Pupils can use their measurement skills in a practical way by going on a special **Scavenger Hunt!** To complete this activity, they have to go into the playground and find objects of various sizes...

Continued on page 3...

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4. SCIENCE LESSON IDEAS

- Students can use the same technique the emperor's son used to weigh the elephant to work out how heavy items are. The **Using Displacement!** sheet will show them how. The experiment requires certain items which are listed on the page. Can your pupils think of how displacement could be used to work out an object's volume, too? (Think of Archimedes and his bath!)

- There are some units that are much stranger than metres or kilograms. That's the subject of **Weird Measurements!** Can students match each unit with its definition? Some of them are a bit tricky, so kids could look them up online if they get stumped.

5. ART LESSON IDEA

- Kids can create a cute elephant picture by copying the one on the **Scale Up the Elephant!** page. They should transfer it onto the large grid by copying the contents of the corresponding squares from the original artwork. Their art will be bigger than the one they are copying, introducing the concept of *scaling* as well.

- The **Elephant Origami** sheet shows how to fold a square of paper into the shape of an elephant head. This can be a bit tricky, as getting the angles of the folds right is very important. **Tip:** It will be easier if pupils use paper that is a different colour on each side!

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STORYTIME GLOSSARY

1 OF 2

You can look up the meanings of words you don't know here!

The Good Hosts of Bremen (Page 6)

- **Yawned:** opened his mouth suddenly due to tiredness
- **Stammered:** spoke uncertainly
- **Shivered:** shook slightly from cold
- **Mind your manners:** act politely
- **Spat:** said as if spitting
- **Pastries:** baked treats made of pastry
- **Tilted:** moved so it leans over
- **Plumped up:** puffed up

The Mulch Fairy (Page 8)

- **Ruined:** damaged so it can't be fixed
- **Squelched:** walked while making a wet sound
- **Pavilions:** tentlike structures
- **Volunteers:** people who choose to do something for no payment
- **Fluorescent:** very brightly coloured
- **A hand:** some help
- **Scattered:** put randomly over an area
- **Wriggling:** twisting and turning
- **Mulch:** decaying leaves, bark or compost
- **Moist:** slightly wet
- **Trudged:** walked with heavy steps
- **Chickpea:** a kind of pealike seed
- **Smirk:** clever smile

King Knut and the Tide (Page 13)

- **Summoned:** called for
- **Invade:** move into a place using force
- **Surrendered:** gave up
- **Conquered:** took control by force
- **Courtiers:** advisors to a king or queen
- **Dignified:** serious and respectable
- **Horizon:** line where the Earth and sky appear to meet
- **Respected:** well thought of
- **Windswept:** exposed to strong winds.
- **Shuffled:** moved this way and that
- **Humble:** modest

Weighing the Elephant (Page 18)

- **Harbourmaster:** a person in charge of a harbour
- **Rajah:** Indian king or prince.
- **Dockworkers:** workers who unload ships
- **Gasped:** said in an astonished way
- **Mused:** said thoughtfully
- **Advisors:** people who give advice
- **Prodding:** pushing in an annoying way
- **Scholar:** someone who studies as a job
- **Spectacles:** glasses
- **Sage:** wise man
- **Tetchily:** in an irritable way
- **Wisdom:** understanding of the world and ability to make good decisions

Continued on page 2...

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STORYTIME GLOSSARY

2 OF 2

The Dolphin (Page 22)

- **Fortunate:** lucky
- **Roofs:** top parts of houses
- **Gawping:** staring in wonder
- **Battlements:** walls
- **Cooed:** spoke in a soft, gentle way
- **Sulkily:** in a gloomy, resentful way
- **Rod and reel:** fishing rod with round cylinder for holding fishing line
- **Jeer:** say in a mocking way
- **Rippling:** moving with little waves
- **Tirade:** loud, furious speech
- **Screeched:** said in a high-pitched way
- **Cackled:** laughed in a loud, harsh way
- **Leaden:** dark grey like lead
- **Gales:** strong winds
- **Capsize:** tip over in water
- **Chittered:** said in a chattering way

The Bridge of Fishes (Page 30)

- **Whim:** small wish
- **Gushes:** flows out in a rapid stream
- **Neighing:** noises made by horses
- **Colts:** young male horses
- **Sunny disposition:** happy attitude
- **Rumour:** story or gossip
- **Glinted:** reflected
- **Quiver:** container for arrows
- **Fugitives:** people who run away
- **Topknot:** bunch of hair on top of head

Her Mother's Daughter (Page 35)

- **Nickname:** humorous name for a person
- **Being strict:** making people follow rules
- **Marbles:** game played with glass balls
- **Mythology:** collections of myths
- **Ferry:** boat for carrying passengers over a short distance
- **Immigrants:** people who move to another country
- **Plaque:** stone or metal plate with words on it
- **Crumbling:** falling to bits
- **Gender discrimination:** treating people worse because of their gender
- **Civil rights:** equal treatment for people

The Opossum and the Secret of Fire (Page 40)

- **Opossum:** kind of ratlike animal that lives in trees
- **Nimble:** quick and skilful
- **Agave:** kind of cactus-like plant
- **Pulque:** a Mexican alcoholic drink
- **Gourds:** fruits with hard shells, used as containers when dried
- **Scramble:** move with arms and legs
- **Chamber:** room
- **Sprinted:** ran as fast as he could
- **Cowered:** crouched down fearfully

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CLASS DISCUSSION SHEET

LET'S TALK ABOUT... **measuring things!** 'Weighing the Elephant' is about working out how heavy an animal is... but what things do students measure in their everyday lives?

1. Do you know how tall you are? Which units do you use to measure yourself?

2. What about travelling? Which units do you use to work out how far you are going, and how long it will take you to get there?

3. How do we talk about how much things weigh? What measurements do you use to measure how heavy a person or item is?

4. What other units of measurement can you think of, and how do you use them in your everyday life?

USING UNITS!

We measure different things using different units.
What units would you use to measure these things?

How long something is? _____

How much time something will take? _____

How loud something is? _____

How hot or cold something is? _____

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READING COMPREHENSION SHEET

Find *similes*, an *alliteration* and a *comparative adjective*!

"Servants opened the crate. The sides fell away to reveal a great grey beast bigger than any the ruler or his ministers had seen before!

"Its legs are as thick as tree trunks!" gasped the emperor.

"The animal's nose looks like a grey snake!" said his wife in surprise.

"Why, those teeth sticking out of its mouth are longer than my arm!" mused a minister."

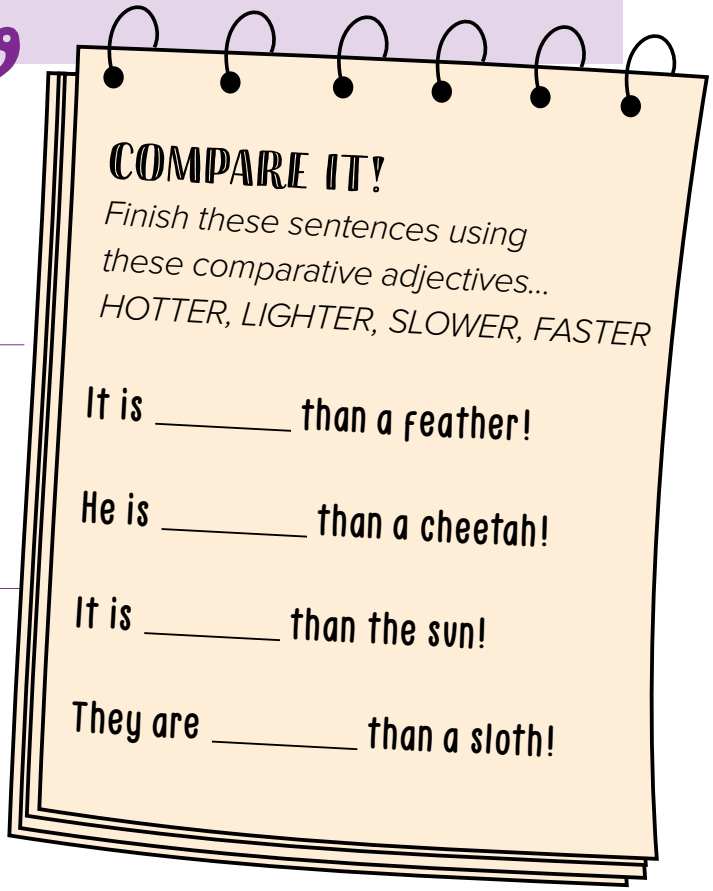
1. *Alliteration* is when two or more words in a row begin with the same letter. What is the alliteration in the second sentence of the extract?

_____

2. A *simile* is describes something by saying it is like something else. Can you spot two similes in the extract?

_____

3. In the last sentence there is a *comparative adjective*, which is a word used to describe something by comparing it to another. What word do you think it is?



ANSWERS: 1. 'great grey'. 2. 'as thick as tree trunks' 'like a grey snake'. 3. 'longer'. **Compare It!** 'It is lighter than a feather!', 'He is faster than a cheetah!', 'It is hotter than the sun!', 'They are slower than a sloth!'

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STORY SEQUENCING SHEET

The events in the story of the emperor's elephant can be found below... but can you number them to show the order they should be read in?

When the man arrived at the emperor's court, he announced that the animal in the box was a present from his master, an Indian rajah. ☐

They tried this suggestion, and it worked! The emperor was pleased to have such a clever son, for wisdom is very precious indeed. ☐

The biggest problem was working out how heavy the elephant was – it was too big to fit on a scale! ☐

One day, a stranger arrived in China with a huge box. He said it was a gift for the emperor and asked for help unloading it. ☐

The emperor then called for the cleverest men in China to measure everything about his new pet. They soon arrived and got to work! ☐

Then, the emperor's son spoke up. He said they should put the beast in a boat and see how far the boat went into the water. ☐

When the box was opened, the emperor and his guests saw a huge grey beast with thick legs and a snakelike trunk. ☐

If they kept putting rocks in the boat so it went into the water the same amount, the rocks would weigh the same as the elephant did! ☐

The heavy crate was loaded into a ox-cart and the stranger drove it across the land. Bystanders were curious about what was in the box! ☐

The visitor said that the creature was an elephant. The emperor was impressed, and asked the man to thank the rajah for the gift. ☐

One sage suggested cutting up the elephant and weighing the pieces, but the emperor refused to allow this. ☐

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STORYBOARD

You can rewrite this month's fable in your own words underneath the pictures below!

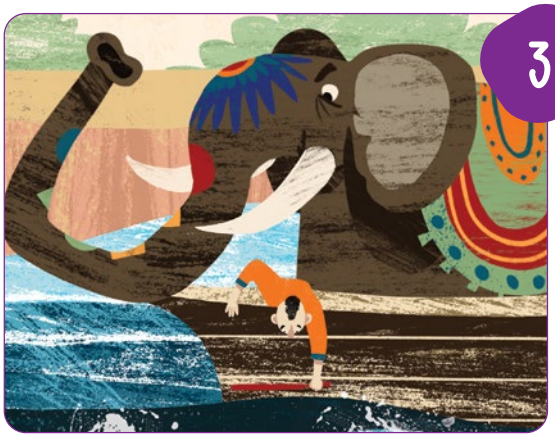
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3



4



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MEASUREMENTS IN HISTORY

People have been measuring things since the very beginning of history... or even before! Here are some strange facts about old measurements that you might not know...

The oldest known systems of measurement date back to around **4000 BCE** – which was when civilization began.

Q: ***Why do you think measurement would be important for organising a society?***

The earliest known **measurements of length** were based on the human forearm, hand or finger.

Q: ***Why do you think this could handy and useful... and how could it cause problems?***

A **cubit** is a form of measurement that is mentioned in the Bible. It's the distance from the elbow to the end of the middle finger. An **inch** was based on the width of a human thumb.

Q: ***What do you think the foot was based on?***

When measuring how much things weighed in ancient times, **people sometimes compared them to the weight of certain seeds**. We still use one of these measurements today – the *carat* was based on the weight of a carob seed!

Q: ***Today, carats are used to measure the weight of:***

A. *carrots*
B. *sheep*
C. *precious stones*

A **furlong** was based on how far a team of oxen could pull a plough without resting. This was used to measure farm fields. In ancient times, countries had their own systems of measurement – a 'foot' could be different in different places!

Q: ***How could this make things tricky for people buying or selling things in other countries?***

In medieval France, a *toise* was equal to six French feet. An iron bar was created to show **how long a toise was**, and it was fixed into a building in Paris so people could check things against it. Unfortunately, it rusted and bent, so it became useless! Metal bars also get slightly longer when warm and shorter when cold, so the 'toise' changed depending on the temperature.

Having lots of different measuring systems based on things like human body parts got very confusing, so it's not surprising that some scientists began work on a new and more scientific system of measurement, called **the metric system!**

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ANSWER: Carats are used to measure the weight of precious stones.

THE MAGIC OF METRIC!

More than two hundred years ago, some very clever people decided to invent a new and better way of measuring things. Here are some things you need to know about the metric system...

The metric system was created in **France** during the 18th century. In 1789, after the French Revolution, the new government decided to introduce a new and scientific system of measurement. Scholars and experts came up with many new units, including some that you might recognise!

A **METRE** was supposed to be one ten-millionth of the distance between the Earth's equator and the North Pole!



A **GRAM** is the mass of one cubic centimetre of water (a cube measuring 1cm x 1cm x 1cm). A gram was a too small to be useful, so the **KILOGRAM** (1000 grams) became the standard metric measurement for mass.

A **SECOND** was meant to be a unit of time equal to **1/86400** of a day. It was used before the metric system, but was adopted as a metric measurement.

A **LITRE** is the volume of liquid that would fill a 10cm by 10cm by 10cm cube.

Smaller and larger versions of metric units can be made by adding these prefixes to them:

pico- a trillionth
nano- a billionth
micro- a millionth
milli- a thousandth
centi- a hundredth
deci- a tenth

kilo- a thousand
mega- a million
giga- a billion
tera- a trillion

New metric units were created to measure different things. They include:

Amperes: electrical current
Degrees Celsius: temperature
Lumens: brightness of a light
Newtons: force
Joules: energy
Bytes: computer data
Hectares: areas of land

FIND IT!

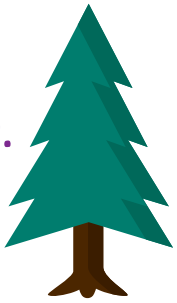
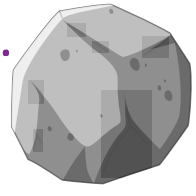
Look around your home or classroom to find items with metric measurements on them! There are metric units on packaging for many items – for example, *volume* for liquids like drinks. How are they labelled? Try to find at least one example each for *volume*, *mass*, and *length* and discuss what you have found.

METRIC MATHS

In the metric system, you can make bigger or smaller units by adding prefixes like *kilo-*, *centi-* or *milli-* to them! Can you complete these sentences by using the prefixes listed on the previous page?

1. A thousand grams is a _____ gram!
2. A hundredth of a metre is a _____ metre!
3. A million bytes is a _____ byte!
4. A thousandth of a second is a _____ second!
5. A thousand joules is a _____ joule!
6. A tenth of a litre is a _____ litre!
7. A thousand metres is a _____ metre!
8. A millionth of a newton is a _____ newton!
9. A trillion metres is a _____ metre!
10. A thousandth of an ampere is a _____ ampere!

Which units could you use to measure these things?

A.  B.  C.  D.  E. 

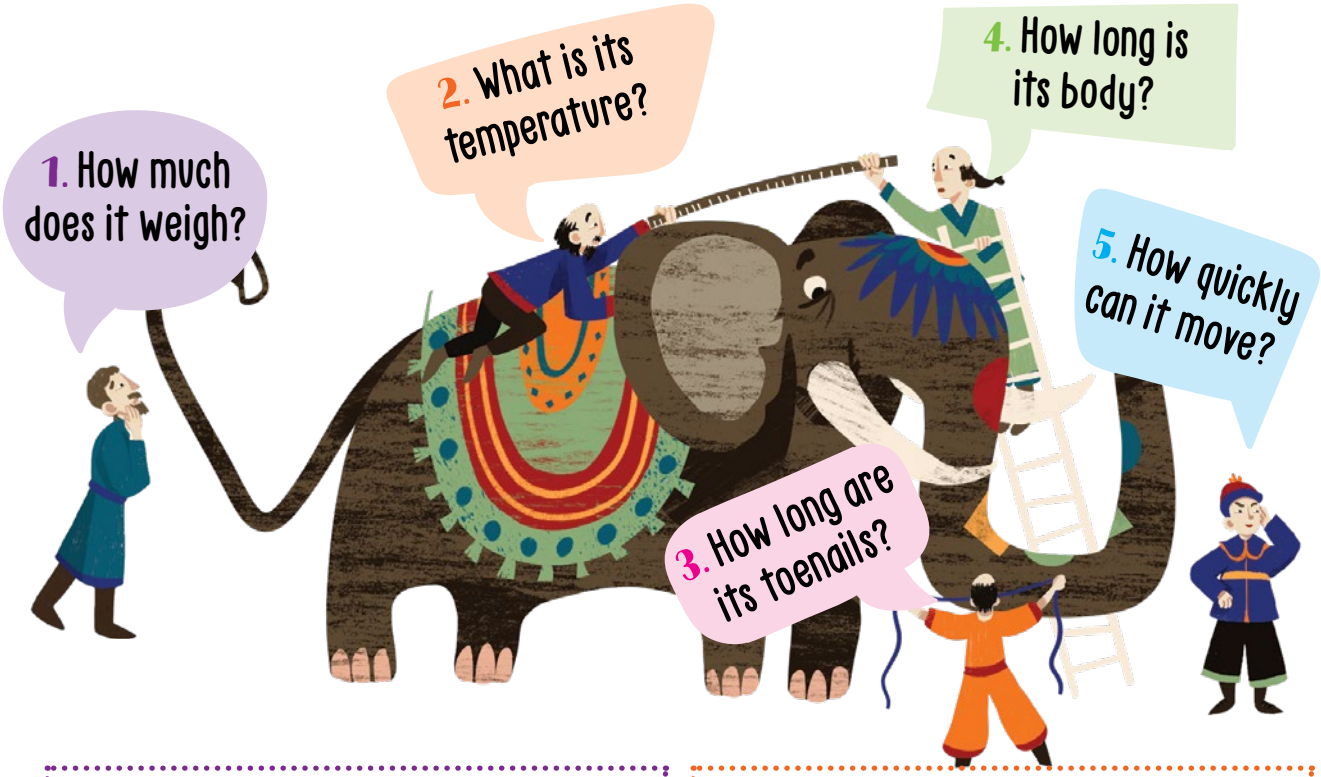
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ANSWERS: 1. kilogram. 2. centimetre. 3. megabyte. 4. millisecond. 5. kilojoule. 6. decilitre. 7. kilometre. 8. micronewton. 9. terrameter. 10. milliampere.

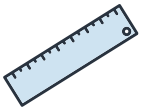
NAME _____ CLASS _____

HOW DO YOU MEASURE IT?

The emperor's new elephant had a baby, and his scientists want to measure it! Which unit and which tool would you use to answer their questions?



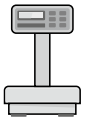
Tools I would use to measure it:

A. RULER 

B. STOPWATCH 

C. TAPE MEASURE 

D. THERMOMETER 

E. SCALE 

Units I would use to measure it:

F. CENTIMETRES

G. KILOGRAMS

H. KILOMETRES PER HOUR

I. DEGREES CELSIUS

J. METRES

ANSWERS: 1. E and G. 2. D and I. 3. A and F. 4. C and J. 5. B and H.

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COLOUR BY SIZE!

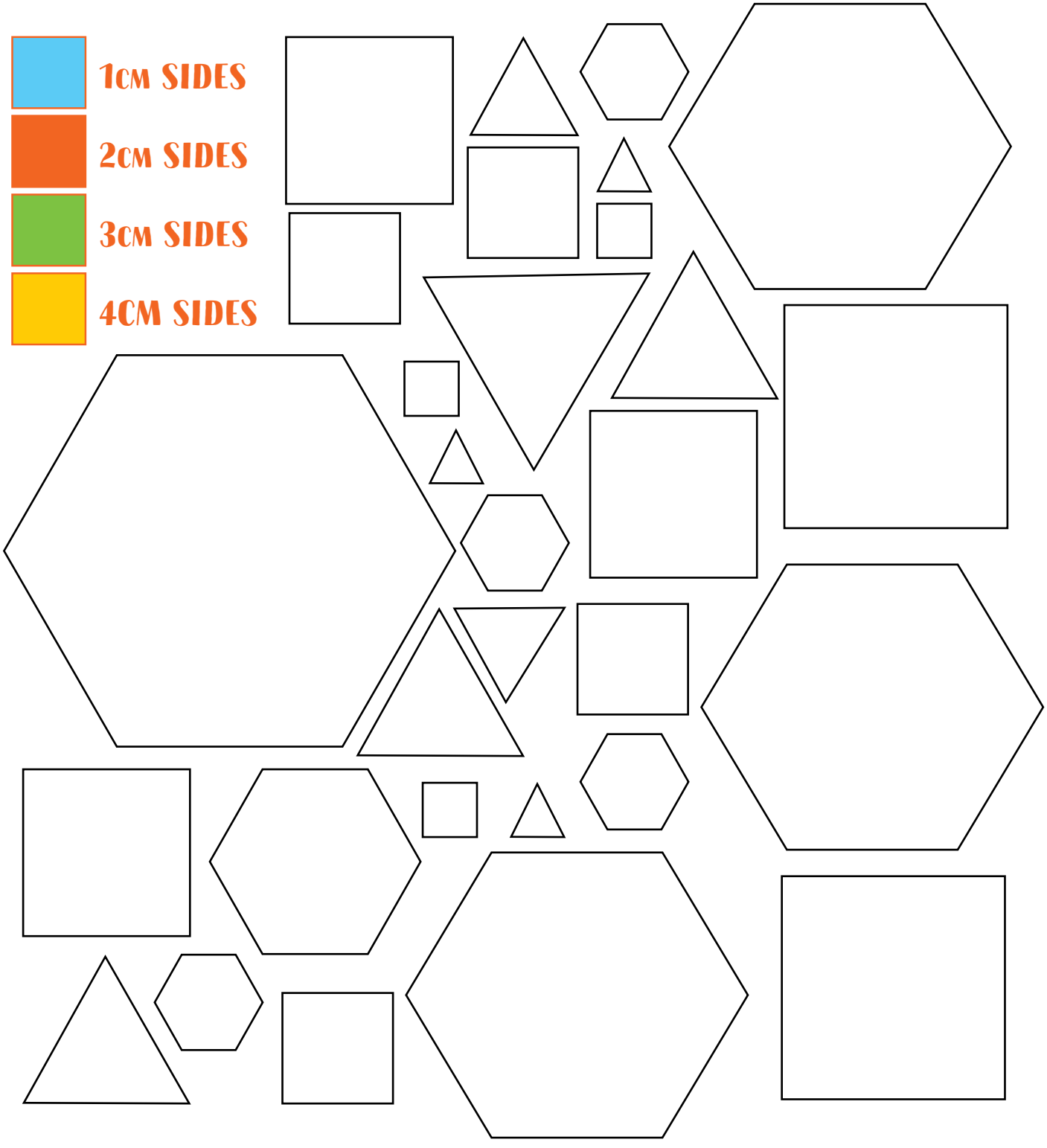
Measure the length of the sides of all of the shapes on this page, then use the guide below to colour them in. All you need is a ruler and some coloured pencils... so get measuring!

1CM SIDES

2CM SIDES

3CM SIDES

4CM SIDES



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UNIT POEM

Here is a fun poem about units! It mentions *imperial* measurements as well as *metric* ones. Once you've read the poem, complete the statements on the right by looking up what each measurement is equal to!

We measure things every day,
From the length of our beds where we lay.
An inch, a foot, a yard, a mile,
Measuring makes us smile!

Length, width, height, and depth,
Volume, weight, we take each step.
Inches, feet, yards, and miles,
Litres, grams, in different styles!

How tall, how short, how far, how near,
Different units, have no fear.
A pint, a quart, a gallon too,
There's a unit just for you!
Length, width, height, and depth,
Volume, weight, we take each step.
Inches, feet, yards, and miles,
Litres, grams, in different styles!

So let's measure and compare,
With units here and units there.
Measurements are fun to do,
Especially with a friend like you!

A. An inch is _____ mm!

B. A foot is _____ cm!

C. A yard is _____ cm!

D. A mile is _____ m!

E. A pint is _____ ml!

F. A quart is _____ ml!

G. A gallon is _____ ml!

H. An ounce is _____ g!

I. A pound is _____ g!

J. A stone is _____ kg!

DID YOU KNOW?

Standard British Imperial measurements like *feet*, *miles* and *pounds* were introduced in the British Empire in 1826. The UK now uses the metric system for most things – but *miles* are used to measure distance, *pints* are used to measure milk and beer, and *pounds*, *stone* and *ounces* are often used to measure weight. The United States uses inches, feet, miles and so on, but they call them *US customary units*.

ANSWERS: A. 25.4mm. B. 30.5cm. C. 914.4cm. D. 1609.3m. E. 568.3ml. F. 1136.5ml. G. 4546.1ml. H. 28.4g. I. 453.6g. J. 6.35kg. (NOTE: the measurements given are for *imperial* units, US customary units can be slightly different.

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SCAVENGER HUNT!



Measuring isn't just for the classroom! For this activity, you should go outside and find things that match the measurements below. Note down what they are and draw pictures of them! You will need this sheet, a pencil and a tape measure.

Find it!	Name it!	Draw it!
Find something **as long as your arm**!		
Find something that is **10mm wide**!		
Find something that is **5cm long**!		
Find something **as tall as you are**!		
Find something **as small as your fingernail**!		
Find something that is **2cm across**!		
Find something that is about **2 metres tall**!		

NAME _____ CLASS _____

USING DISPLACEMENT!

In 'Weighing the Elephant', the emperor's son came up with a clever way to measure the weight of an animal by measuring how much water its weight pushed aside. You can use the same trick with this experiment!

WHAT YOU NEED:

- **A large bowl**
- **A container that fits in the bowl**
- **Water**
- **Metal weights – 10g, 50g and 100g if possible.**
- **Four objects that fit in the container (like toys, an apple and a rock)**
- **An erasable marker**
- **A digital scale**

HOW DOES IT WORK?

When an object floats in water, it pushes down on it. The heavier the object is, the more water it pushes out of the way (or *displaces*). Too much weight will push the object down so far that it will sink! Cargo ships have lines painted on their sides called 'Plimsoll lines'. If the ship is carrying so much weight that this line is underwater, the ship is not safe!

HOW TO DO IT:

1. First, half-fill the bowl with water and float the plastic container in it.
2. With the marker pen, draw a line to mark the level of the water. Label it '0' – this is where the water level is when the container is empty.
3. Now, choose an object and put it in the container inside the bowl. Draw a line to mark the new water line and label it with the name of the object.
4. Take the object out and begin putting weights into the container until the water level reaches the line you marked.
5. Weigh the weights in the container. Note down this measurement on a piece of paper.
6. Weigh the object on the scale and write down the result. Did the results match?
7. Repeat this process with new objects and note down the results. Did students notice that some objects are bigger but lighter than others? This introduces the concepts of *density* and *volume*!

WEIRD MEASUREMENTS!



All kinds of strange measurements are used for special things! Can you match the units below with their definitions?

A. MICKEY ☐

B. HORSE ☐

C. NIBBLE ☐

D. PARSEC ☐

E. WHEATON ☐

F. BANANA-EQUIVALENT DOSE ☐

G. OLF ☐

H. BUTT ☐

I. MORGEN ☐

J. PORONKUSEMA ☐

K. JIFFY ☐

L. ERLANG ☐

1. The amount of radiation you get from eating a banana

2. The distance light can travel in a second

3. An amount of liquid equal to 1,060 litres

4. Having half a million social media followers

5. 10 milliseconds

6. One hour of a person talking non-stop on a mobile phone

7. The amount of land a person with a team of oxen can plough in a morning

8. The smallest measurable movement of a mouse cursor on a computer screen

9. The smelliness of a clean person sitting indoors

10. The distance a Finnish reindeer travels before going to the toilet (about 7.5km!)

11. The length of a horse

12. Half a byte of computer data

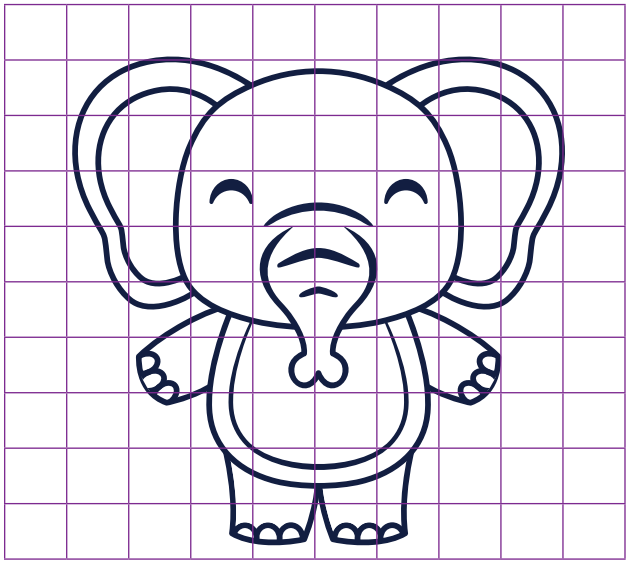
ANSWERS: A. 8, B. 11, C. 12, D. 2, E. 4, F. 1, G. 9, H. 3, I. 7, J. 10, K. 5, L. 6.

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SCALE UP THE ELEPHANT!

Create a copy of this picture of an elephant by copying it onto the grid below! Pay attention to which bits go in each square...

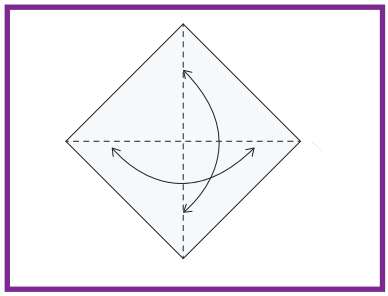


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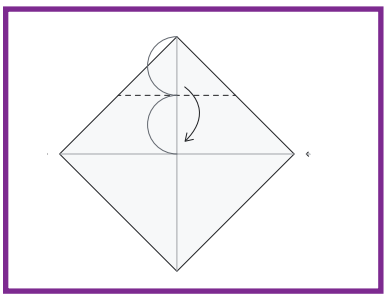
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ELEPHANT ORIGAMI

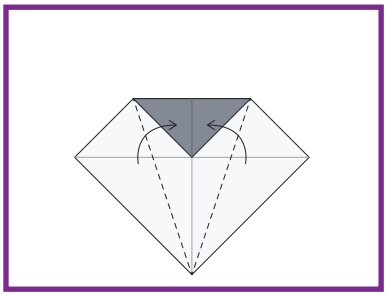
Follow these instructions to fold your own paper elephant! All you need is a square of paper and a marker to draw the eyes on with...



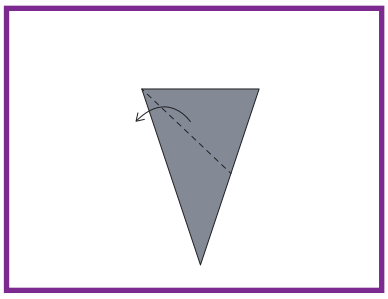
1 Fold the paper in half twice from corner to corner, creating creases



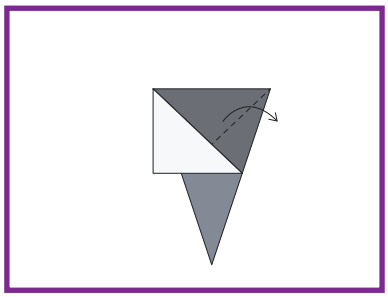
2 Fold the top point of the paper down towards the centre.



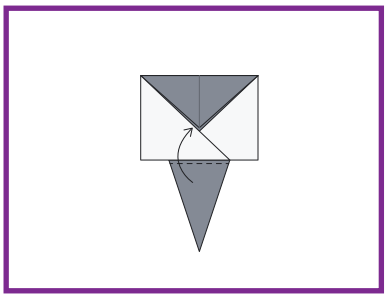
3 Fold both side corners in towards the centre as well.



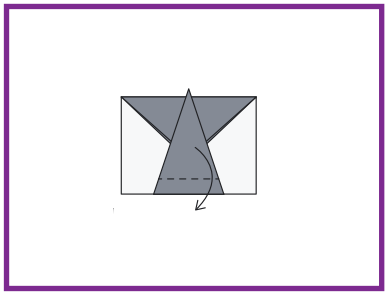
4 Fold an upper corner of triangle to one side.



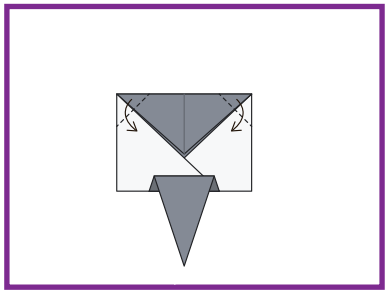
5 Do the same with the other upper corner!



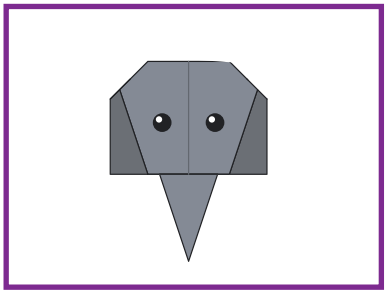
6 Fold the bottom point upwards as shown.



7 Fold the point back down where the dotted line is shown.



8 Fold in the top two corners and flip the elephant over.



9 Your elephant is done! Draw on two shiny black eyes!

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