

Numeracy Skills for Science

Tables Level 3

I can work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether I believe the information to be robust, vague or misleading.

MNU 3-20a

Quarter	Cost of Electricity (£)
January to March	327.00
April to June	188.00
July to September	183.00
October to December	302.00

Name: _____

Class: _____

Showing Information in a Table

1. Reasons for showing information in a table

Compare the two ways of showing the same information below:

Paragraph

Alkaline batteries are used in cassette players and have a storage life of five years. Both silver oxide and zinc chloride batteries have a storage life of two years. Silver oxide batteries are used in calculators and zinc chloride batteries are used in torches. Computers have lithium batteries with a storage life of 10 years.

Table

Type of Battery	Storage life (years)	Uses
Alkaline	5	cassette players
Silver oxide	2	calculators
Zinc chloride	2	torches
Lithium	10	computers

Both give information about batteries. Which way of displaying information would you find easier if you wanted to know what type of battery to put in your **torch**?

Scientists use **Tables** to display information because:

- It is easier to find information in the Table.
- The information is organized in a logical, methodical way.
- The reader can ignore all the information he does not need.

2. How to Display Information in a Table

Example:

The following passage gives information on various **types of batteries**, their **uses** and their **storage life**.

Alkaline batteries are used in cassette players and have a storage life of five years. Both silver oxide and zinc chloride batteries have a storage life of two years. Silver oxide batteries are used in calculators and zinc chloride batteries are used in torches. Computers have lithium batteries with a storage life of 10 years.

1. First, read the **description** before the paragraph.
2. Look at the paragraph of information.
Break it up. Either imagine each sentence on a different line **or** draw slashes to separate the sentences.

Alkaline batteries are used in cassette players and have a storage life of five years. /
Both silver oxide and zinc chloride batteries have a storage life of two years. / Silver
oxide batteries are used in calculators and zinc chloride batteries are used in
torches. / Computers have lithium batteries with a storage life of 10 years. /

3. Now that it is broken up, read the sentences. You can see that
 - a) each sentence has a different **type of battery**. There are 4 types mentioned in the paragraph.
 - b) the sentences tell you about the **storage life** of each battery
 - c) the sentences tell you the **uses** of the batteries.
- Use different coloured highlighters to mark them.
 - Note that the information is **not** given in the same order in all the sentences.

Alkaline batteries are used in cassette players and have a storage life of five years. /
Both silver oxide and zinc chloride batteries have a storage life of two years. / Silver
oxide batteries are used in calculators and zinc chloride batteries are used in
torches. / Computers have lithium batteries with a storage life of 10 years. /

At Level 3, you are normally given the headings for your table.
Sometimes the **headings** are in **bold** in the description.

**If you have to put in headings, these are the headings.
Put them in the table first.**

At Level 3, you will be given a table **with headings**, and asked to insert the information.

- There are 4 blank rows, so start with the four **types of battery**.
- Look back at the information and fill in the **storage life** for each type of battery.
- Finally, fill in the **uses**.

Alkaline batteries are used in cassette players and have a storage life of five years. / Both silver oxide and zinc chloride batteries have a storage life of two years. / Silver oxide batteries are used in calculators and zinc chloride batteries are used in torches. / Computers have lithium batteries with a storage life of 10 years. /

Type of Battery	Storage Life	Uses

Your table should look like this:

Type of Battery	Storage Life	Uses
Alkaline	5 years	cassette players
Silver oxide	2 years	calculators
Zinc chloride	2 years	torches
Lithium	10 years	computers

Aluminium

The transport industry is the biggest user of aluminium in the world. It uses 26% of the aluminium produced. 22% of the world's aluminium production is used by the packaging industry. The construction industry uses 20% of the aluminium produced, while the electrical engineering industry uses 9%.

- Use this information to complete the table below.

Industry	Aluminium used (%)

Electrical Energy

Germany is the biggest producer of electrical energy in the European Union. Germany produced 580 billion kWh in one year. France and the United Kingdom were the second and third largest producers with 520 and 370 billion kWh. A total of 280 billion kWh of electrical energy was produced by Italy, the fourth largest producer.

- Use this information to complete the table below.

Country	Electrical energy produced (billion kWh per year)

Electrical Appliances

Different types of electrical appliances can be found in a modern kitchen. The power rating of a food blender is 600 watts. An electric can opener has a power rating of 100 watts. A bread-maker has a power rating of 500 watts and the power rating of an ice cube maker is 200 watts.

(a) Use this information to complete the table.

<i>Electrical appliance</i>	<i>Power rating (watts)</i>

Cost of Electricity

George compared the cost of electricity from different suppliers. Northpower charges 17p per unit of electricity. 14p is the cost per unit from Southpower. The cost per unit from Westpower is 12p while from Eastpower it is only 10p.

- Use this information to complete the table.

Electricity Supplier	Cost per unit (p)

The Heart

The heart is formed from four chambers. The upper chambers are the left atrium and the right atrium. The wall of the right atrium has an average thickness of 2 mm. The left atrium wall is on average 3 mm thick. The lower chamber on the left side, the left ventricle, has walls on average 18 mm thick, compared to 4.5 mm in the right ventricle.

- Use this information to complete the following table.

Heart chamber	Average wall thickness (mm)

Hardness of Minerals

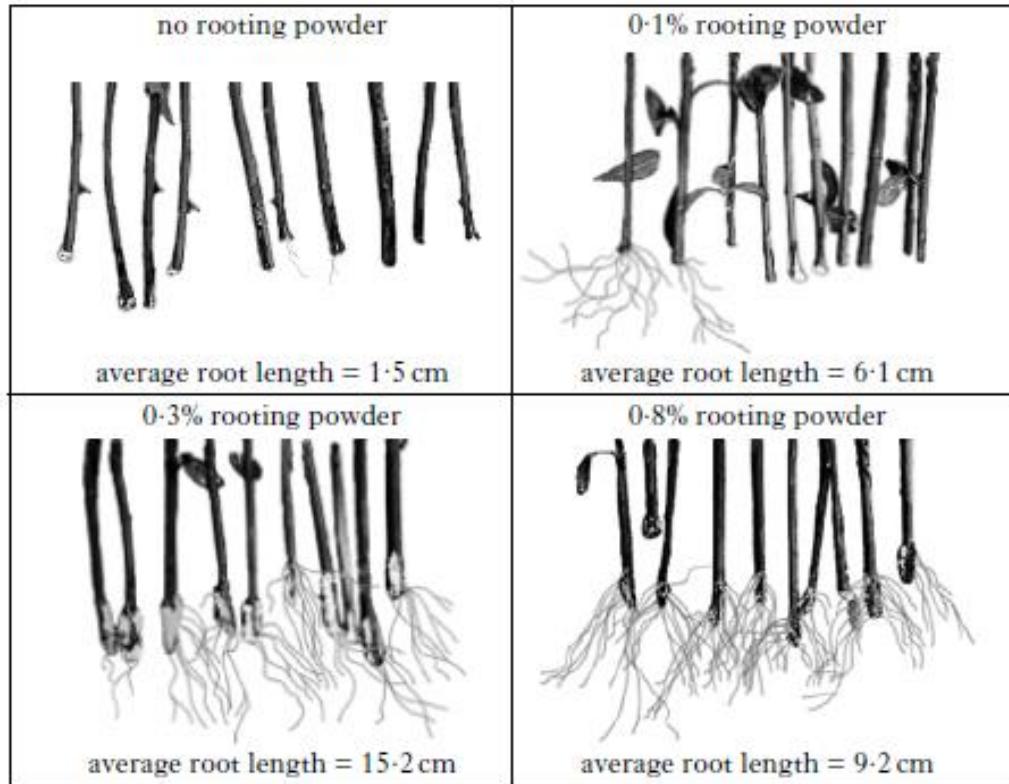
Hardness is the ability of a mineral to resist scratching. Scientists have arranged minerals in order of hardness on Moh's scale. On this scale, talc is the softest mineral with a hardness of 1. Diamond is the hardest at 10. Glass is in the middle of the scale at 5 and quartz is harder at 7.

Put the above information into this table:

Mineral	Hardness on Moh's scale

Roots

A group of students carried out an investigation into the effect of different concentrations of rooting powder on the root growth of rose cuttings. Ten cuttings were dipped in different concentrations of rooting powder. The cuttings were grown in coarse sand for five weeks and the lengths of the roots were measured. The results are shown below.



- Use this information to complete the following table.

Concentration of rooting powder %	

Blood Groups

There are four different blood groups called group A, group O, group B and group AB. For Japanese people, the most common blood group is A, with 38% having this type of blood. 30% of Japanese people have blood group O and 22% have blood group B. The remaining 10% have blood group AB.

(a) Use this information to complete the table below.

Blood Group	Percentage of Japanese people (%)

Smokers

The percentage of adults who smoke is dropping in different parts of the United Kingdom. In the South of England, only 25% of people smoke, but in the North of England the percentage of people who smoke is 31%. In Scotland 32% of people smoke, while 27% of the people in Wales are smokers.

- Use the information above to complete this table:

Part of the United Kingdom	Percentage of people who smoke

Energy

Nearly all of the energy used in the world comes from burning fossil fuels. Coal provides 31% of the world's energy. The second largest source of energy is oil which provides 26%. Another 19% of the world's energy comes from natural gas. Renewable energy sources provide 20% of the world's energy needs.

- Use the information above to complete this table:

Source of energy	Percentage of the world's energy (%)

Noise

Loud noises can damage your hearing. The noise level from a disco loudspeaker is 100 decibels. Busy traffic has a noise level of 70 decibels and a road drill has a noise level of 110 decibels. The noise level from an aircraft taking off is 140 decibels.

- Use the information above to complete this table:

Source of noise	Noise level (decibels)

Insects

Different insects can grow to different lengths and are found in different continents. The largest ant is the Driver Ant. It lives in Africa and can grow to 3.5 cm. The Long Horn Beetle can be as long as 24cm and the Robber Fly can grow to 6.5 cm. Both of these insects are found in South America.

- Use the information above to complete this table:

Insect	Length	Continent

Oceans

Oceans cover a large area of the Earth.

The Arctic Ocean has an area of 14 million square kilometres and a depth of 5500 metres. The Indian Ocean has an area of 73 million square kilometres and the Atlantic Ocean has an area of 82 million square kilometres. Both the Indian Ocean and the Atlantic Ocean have a depth of 8 000 metres. The biggest ocean is the Pacific Ocean, with an area of 165 million square kilometres and a depth of 11 000 metres.

- Use the information in the passage to complete the table below.

Name of Ocean	Area of Ocean (million square kilometres)	Depth of Ocean (metres)

Acids and Alkalis

Acids are substances found in lemons, oranges and limes. Three common acids are Sulphuric acid (H_2SO_4), Nitric acid (HNO_3) and Hydrochloric Acid (HCl). Alkalis are the opposite of acids. Common alkalis are Ammonia (NH_3), Sodium hydroxide (NaOH) and Calcium hydroxide ($\text{Ca}(\text{OH})_2$). The most common use of alkalis is in household cleaners.

Substance	Acid or Alkali	Chemical Formula
Sulphuric acid		H_2SO_4

Fish in Rivers

There are three zones in a river. In the upper zone the current is fast and brown trout are found there. Minnows are found in the middle zone of a river, where the current is moderate. The lower zone, with its slow current, is where pike are found.

Zone	Speed of current	Fish found in zone

Wrens

The summer temperature in Iceland is 10°C . Wrens from Iceland have a wing length of 59mm. On Shetland, where the summer temperature is 13°C , the wing length of wrens is 52mm. The wing length of wrens in the Western Isles is 50mm, where the summer temperature is 14°C . Mainland Scotland, with a summer temperature of 15°C , has wrens with the smallest wing length, only 48mm.

Place	Summer temperature ($^\circ\text{C}$)	Wing length of wren (mm)

Three Bears

Polar bears live in the Arctic Circle, near the North Pole. Polar bears stay warm in very cold temperatures because they have a layer of fat, called blubber, and because they are covered in two layers of fur. Polar bears are excellent swimmers and have short claws to help them walk across ice and snow. Polar bears mostly eat seals, but they will eat other arctic animals as well. Grizzly bears can be found in the mountains of Asia, Europe and North America. Grizzly bears like to eat plants, mammals and fish. They can run over thirty miles per hour. Even though grizzly bears are very big and strong, their cubs only weigh one pound when they are born. The Giant Panda lives in China and has black and white fur. This bear eats up to thirty pounds of bamboo every day. The Giant Panda is an endangered animal because many of the forests where they live have been destroyed.

Use the information above to fill in the table:

Type of Bear	Habitat	Herbivore, Carnivore or Omnivore	Preferred food

Nocturnal Animals

Animals that sleep during the day and come out at night are called nocturnal. For desert-dwelling animals, being active at night allows them to escape the heat of day and to conserve water. Many snakes and rodents are examples of desert animals that prefer the night.

The darkness of night makes it easier for some animals to escape predators, especially if the animal is dark enough to blend into its surroundings. Some animals are always listening with their extra good hearing while others keep close watch with great night vision.

Then there's the hedgehog, a small nocturnal mammal that rolls up into a ball of spiny hairs when danger comes near. Because it is active only at night, it can usually wander around unseen. The skunk, another nocturnal animal, has most smelly way to defend itself. It's fur is mostly black, which blends in with the darkness. Of course, there are predators that are especially adapted for night hunting, so no prey animal is safe simply because it's nocturnal. Owls and certain species of cats are very effective nocturnal hunters because they have great night vision and excellent hearing. In addition to this, owls have softer feathers than most other birds so they can swoop silently down upon prey. Of course cats don't have feathers, but the soft pads on their feet allow them to quietly sneak up on small animals. Cats also use their whiskers to help feel their way in the dark.

Another predator that's well-known for its nocturnal behaviour is the insect-eating bat. Instead of using their eyes to hunt for an insect dinner they use echolocation. The bat emits a very high-pitched sound. The sound is so high that people can't even hear it. However, the bat has specially adapted ears so it can hear these sounds. When the sound hits an object it bounces, or echoes, back. From the sound of the echo the bat immediately knows the object's size and location. Its echolocation can also determine if an object is an insect or something that can't be eaten like a plant or a tree.

Fill in table below to show ways animals have adapted to survive at night. Use only information from the article. Some boxes have already been filled in.

	Adaptation 1	Adaptation 2	Adaptation 3	Adaptation 4
bat				
skunk		sprays a bad-smelling chemical		
owl	excellent night vision			
cat				excellent hearing

Real Ale

Real ale is produced by fermentation.

There are many different types of real ale, some of which are described below.

Best Bitter: brown, tawny or amber in colour, 4.6% in strength

Porter: black or dark brown in colour, 6.5% in strength

Stout: 4.5% in strength and black in colour

Golden Ale: 5.3% in strength and pale amber, gold, yellow or straw in colour

- Complete the table below using the above information.

Type of Ale	Colour(s)	Strength (%)
	Black	
Porter		
	Pale amber, yellow or straw	
		4.6