

THE SOLAR SYSTEM

The Sun is the star at the centre of our solar system. In our solar system, there are eight planets and their moons, as well as asteroids and comets, which travel, or orbit, around the sun.

Here are some amazing facts!

The Sun:

- is a medium-sized star and is about 150 million kilometres from Earth.
- weighs 300 000 times more than Earth even though it is made up of gas.
- has a surface temperature of about 6000°C while its core is about 15 million°C.
- is about halfway through its life and will burn for another 5 billion years.

The Inner Planets . . .

Mercury:

- is the closest planet to the sun.
- is very hot during the day (430°C) but very cold at night (-180°C).
- takes only 88 Earth days to orbit the sun.



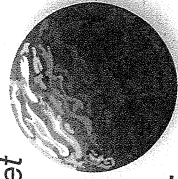
Venus:

- is the hottest planet in our solar system.
- is surrounded by thick, orange clouds.
- shines so brightly in the evening that it is known as the *Evening Star*.

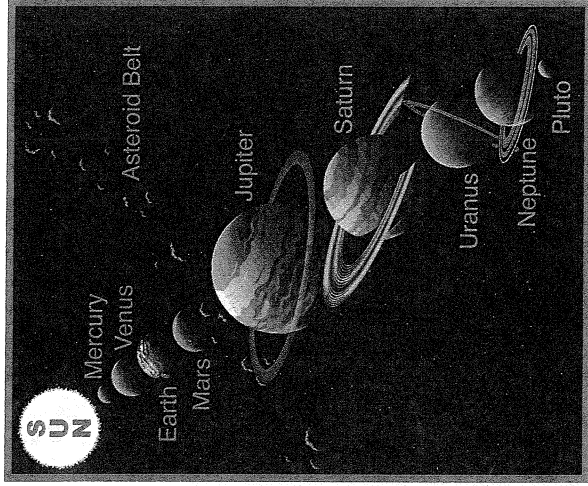


Earth:

- is sometimes called the *water planet* because 70 percent of the Earth's surface is covered in water.
- is the only planet in our solar system known to have living things.
- takes one year (365 days) to orbit the sun.



The Solar System



Saturn:

- is best known for its rings which are made of ice, dust and rocks.
- is the second biggest planet.
- has more than 30 moons.

Uranus:

- is blue-green in colour.
- has eleven narrow rings around it.
- is very cold and icy.

Neptune:

- is a stormy planet with strong winds.
- is blue in colour and has four rings.
- is extremely cold.

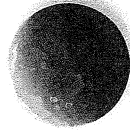
Pluto: Dwarf Planet

- is no longer considered a planet.
- is about the size of our moon.
- takes 248 Earth years to orbit the sun.



Mars:

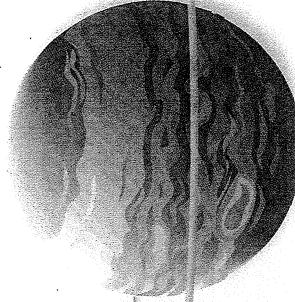
- is often called the *red planet* because it is covered in red dust.
- has ice caps at its poles.
- has two moons which are shaped like potatoes.



The Outer Planets . . .

Jupiter:

- is a giant planet, one thousand times bigger than Earth.
- is made of gas.
- has massive storms that can last for hundreds of years.



Comets, Asteroids and Meteoroids . . .

Comets are balls of dirt and ice that orbit the sun. When a comet passes close to the sun, it begins to melt. This creates the comet's tail.

Asteroids are pieces of rock. Most of them orbit the sun between Mars and Jupiter.

Meteoroids are pieces of stone debris that travel in space. If a meteoroid falls into the Earth's atmosphere, it burns up and glows. This is called a meteor. If you have ever seen a shooting star in the night sky, you have actually seen a meteor!

Questions

- How long will the sun keep burning?
 - 5 years
 - 5 million years
 - 5 billion years
 - 10 billion years
- The closest planet to the sun is
 - Earth.
 - Venus.
 - Mars.
 - Mercury.
- Which planet is known as the Evening Star?
 - Neptune
 - Jupiter
 - Saturn
 - Venus
- The biggest planet is
 - Uranus.
 - Saturn.
 - Earth.
 - Jupiter.
- Pluto is about the size of
 - Mars.
 - Earth.
 - Mercury.
 - our moon.
- Meteors glow when they shoot through our sky because
 - the sun is shining on them.
 - they are stars.
 - they are burning up.
 - they are made of dirt.

Vocabulary

The words in the box come from the text. Match them to the clues below.

moons planets orange
orbit afternoon

- There are eight of these in the solar system.
- The opposite of morning.
- To travel around the sun.
- Mars has two of these which are shaped like potatoes.
- Venus' clouds are this colour.

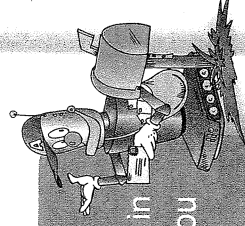
Words at Work

Special words are often used to describe jobs. Write the word that describes each occupation.

- Person who studies the stars.
(astronomer / asteroid)
- Person who repairs machinery.
(mechanical / mechanic)
- Member of parliament.
(politician / political)
- Person in charge of a newspaper.
(edition / editor)

Challenge Option

Research: Pick one of the planets in our solar system and find out all you can about it.



Alphabetical Order

Which word in each row would come **last** in alphabetical order.

- sun, shines, amazing
- earth, planets, poles
- star, clouds, solar

Cloze

Choose **five** of the following eight words to fill the gaps.

spacecraft moon above shuttle
measure people time space

The Space Shuttle

The shuttle, or space orbiter, was designed to take up to eight **19**, along with equipment and supplies, to a maximum orbit 300 kilometres **20** the earth.

This amazing **21** is almost totally reusable. The pilot of the shuttle lands the craft back on earth like a glider so it can be blasted back into **22** at a later time.

The rocket boosters that help to propel the **23** into space are retrieved and used again also.

MOVING LINES

ACTIVITY INSTRUCTIONS

Task

Experiment with using line to create movement, in the style of Op Art. You may choose to work in black and white or in two contrasting colours.

Materials

A lead pencil

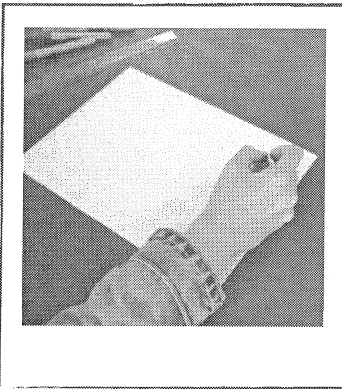
White card

Ruler

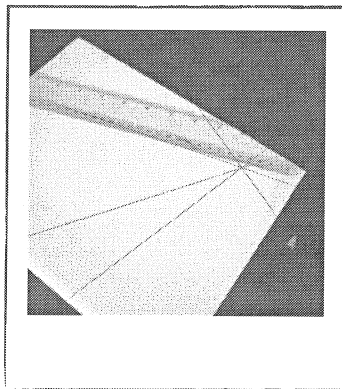
2 contrasting coloured felt pens OR a black felt pen

Ideally, fine-tip felt pens in the same colour

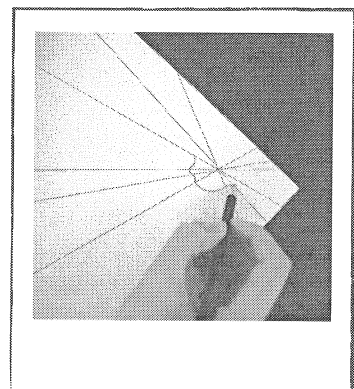
Procedure



1. Using your lead pencil, place a small, off-centre dot in the top (or bottom) third of the card.

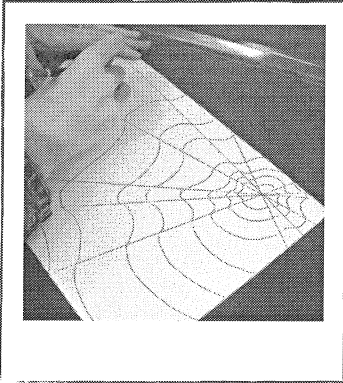


2. Using a ruler, draw 6 lines that start at the edge of the page and pass through the dot, so the lines all intersect. Each line should start and finish at an edge. These intersecting lines will create triangular sections. Try to place your lines so that the sections are different widths, i.e. they're not all equidistant.

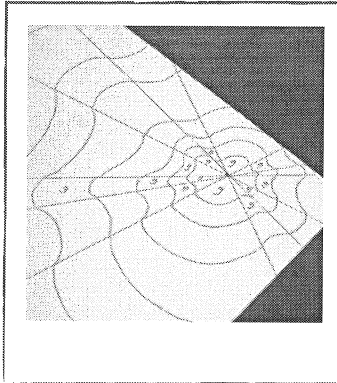


3. Start in one triangular section and draw a curved line across to the next section. Join this section to the next, but change the direction of the curve.

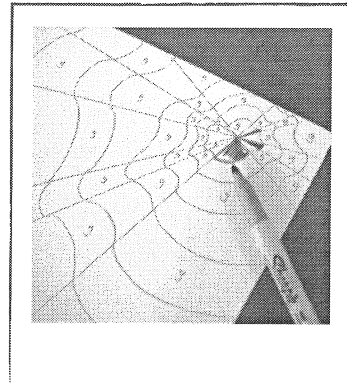
Procedure (cont.)



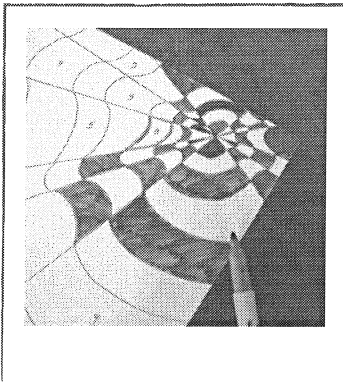
4. Continue creating concentric curved lines, alternating the direction of the curve for each section. Gradually widen the bands as you move away from the dot where the lines intersect.



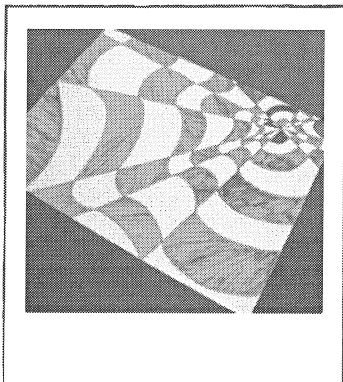
5. You will need to colour alternate segments until they resemble a chequerboard. To avoid mistakes, label each segment in pencil first, so you know which colour to use.



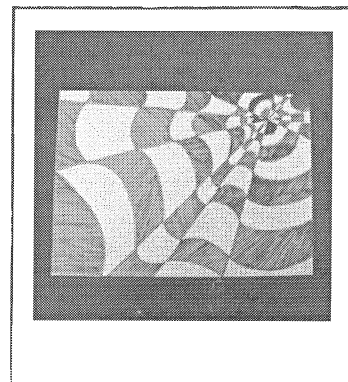
6. Start at the point where the lines intersect. Choose 1 colour and begin to fill in the alternating segments. Work your way around the design. It is best to use a fine-tipped pen at first, because the segments close to the dot are so small.



7. Gradually work your way out from the centre, shading the segments and using a thicker felt pen once the segments become larger.



8. If you are working in a single colour, or in black and white, leave the rest of the segments white. If you are using a second colour, fill the contrasting segments in the same way.

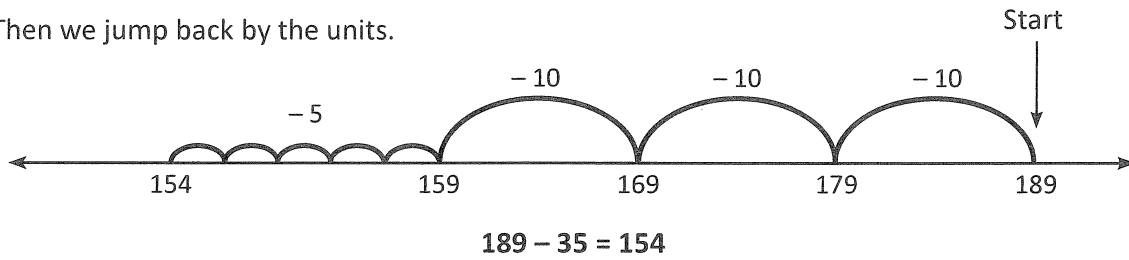


9. When you are finished, your artwork should confuse the eye and appear to move by itself.

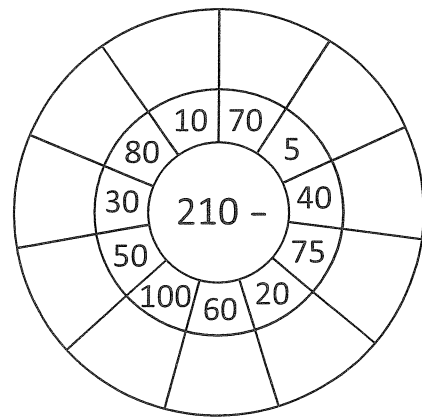
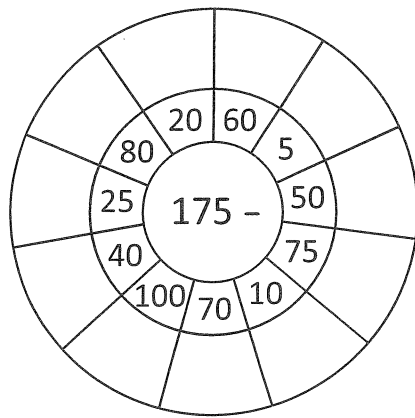
Subtraction mental strategies – jump strategy

When we subtract we can use the jump strategy to help us. Look at $189 - 35$:

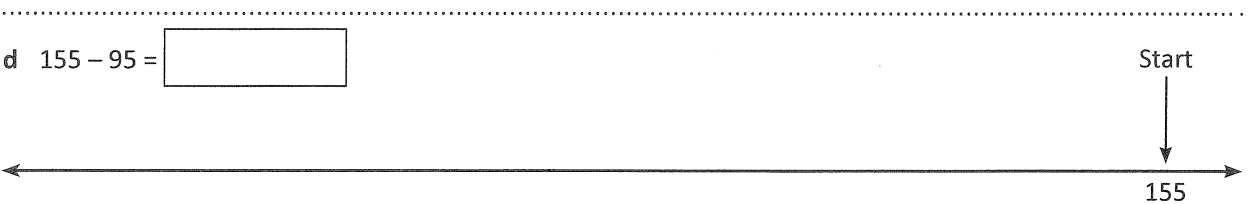
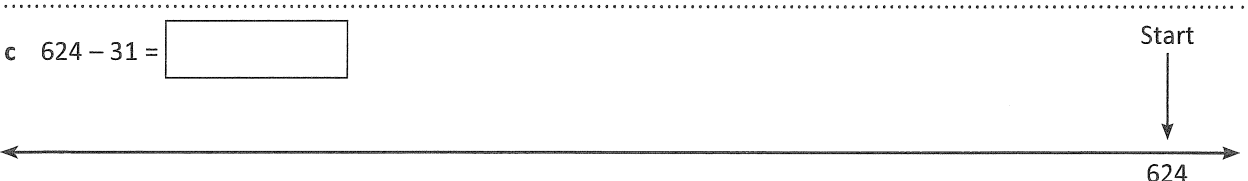
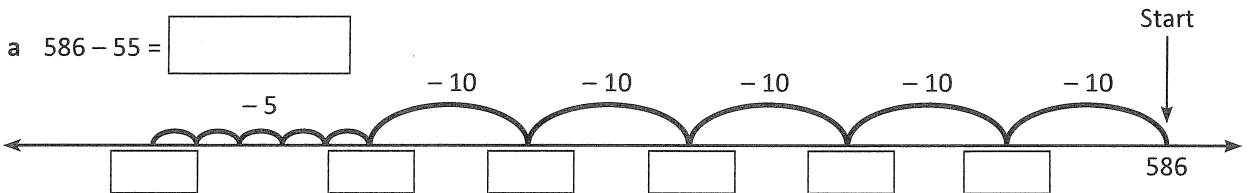
- 1 First we jump back by the tens.
- 2 Then we jump back by the units.



- 1 Warm up with these subtraction wheels:



- 2 Use the jump strategy to complete these subtraction problems. The first one has been started for you:



Subtraction mental strategies – jump strategy

3 Work out the answers to these by using the jump strategy. See if you can do the working in your head:

a $274 - 30 =$

b $872 - 61 =$

c $444 - 50 =$

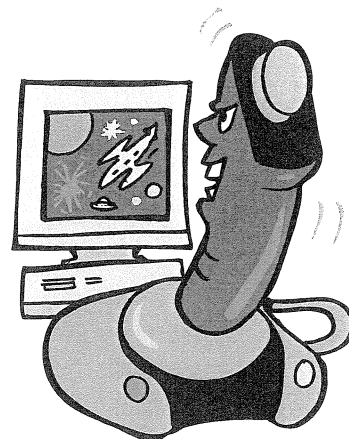
d $784 - 61 =$

e $189 - 35 =$

f $825 - 60 =$

4 An electronics store had a sale on the following video games. Use the jump strategy to work out the savings on each item:

Bionic Bozo	Revenge of the Ponies	Fitness Frenzy	Taekwondo Team
Was \$105	Was \$135	Was \$102	Was \$155
Now \$75	Now \$60	Now \$91	Now \$111
Save	Save	Save	Save



5 Use the prices above and the jump strategy to solve these problems. Show your answer and any working out:

a Tahlia saved her pocket money for weeks to buy Fitness Frenzy. She had \$120 saved and bought Fitness Frenzy in the sale. How much money did she have left after the purchase?

b Martin saved up especially for the sale and bought 2 items for \$186. He bought Bionic Bozo and which other game?

c Dana bought Taekwondo Team for her husband before the sale. What change did she receive if she paid with 2 \$100 notes?



Getting ready

Work out the answers to these sums in your head. Each answer matches a letter in the list on the right. Write the letters next to your answers, then unjumble the letters to find the name of a city.



What to do

Try competing with a friend to be the fastest to do all of the sums and work out the names of the three cities.

- a $701 + 126 =$ Letter _____
- $501 + 81 =$ Letter _____
- $810 + 117 =$ Letter _____
- $304 + 205 =$ Letter _____
- $810 + 17 =$ Letter _____
- $230 + 626 =$ Letter _____

The city is _____

- b $293 + 216 =$ Letter _____
- $811 + 111 =$ Letter _____
- $650 + 130 =$ Letter _____
- $610 + 57 =$ Letter _____
- $380 + 32 =$ Letter _____

The city is _____

- c $816 + 40 =$ Letter _____
- $913 + 62 =$ Letter _____
- $751 + 105 =$ Letter _____
- $830 + 79 =$ Letter _____
- $882 + 93 =$ Letter _____
- $471 + 111 =$ Letter _____

The city is _____

Code

- A = 922
- B = 754
- C = 141
- D = 582
- E = 927
- F = 735
- G = 222
- H = 358
- I = 780
- J = 989
- K = 481
- L = 909
- M = 398
- N = 856
- O = 975
- P = 667
- Q = 555
- R = 412
- S = 509
- T = 538
- U = 656
- V = 1110
- W = 1150
- X = 716
- Y = 827
- Z = 1907

Unit 35



air are chair square

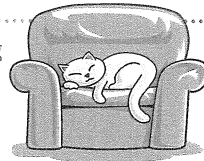
List Words

tear
 they're
 everywhere
 ware
 pare
 spare
 prepare
 compare
 scare
 flare
 flair
 glare
 glary
 scary
 daring
 sharing
 repaired
 careless
 unaware
 rarely
 scarcely
 vary
 various
 prayer
 mayor

- 1 **Colour** the graphemes that represent in the List Words.
- 2 **Go** to the List Words for Unit 35. **Count** the sounds and identify all the graphemes in each List Word.
- 3 **Write** any other letters that can represent on the Grapheme Chart. **Write** one word example for each.
- 4 **Colour** the grapheme, shown at the beginning of each row, in the words in each row if it represents .

Grapheme Chart

grapheme	word



air repair repairing flaired aircraft wheelchair fairy hairbrush dairy
are stare prepared aren't parent shared area careful roared
ear tearful bear wear pear appear heard heart tearing
ere there where here were erect sincere interest wherever
a caring wary parents airy scared scarred flared flaring

- 5 **Write** List Words with in these positions with the number of letters shown.
 - 2nd, 4 letters _____
 - 2nd, 6 letters _____
 - 5th, 7 letters _____
 - 2nd, 5 letters _____ 3rd, 6 letters _____
 - 2nd, 8 letters _____ 3rd, 8 letters _____
- 6 **Write** graphemes to represent to finish these words. **Use** your dictionary.

m_____ m_____ fl_____ fl_____ gl_____ pr_____

sn_____ sc_____ sp_____ st_____ st_____ sw_____

ch_____ sh_____ th_____ th_____ th_____ squ_____
- 7 **Build** words by using the same word on every line in the group. **Use** vary, care, pair, pare, where, ware. **Change** spelling where necessary. Go to Helpful Hints.

every_____	a_____	child_____	_____ed	pre_____	re_____
some_____	una_____	_____ing	_____ing	pre_____ation	disre_____
_____ever	_____y	_____ful	_____ious	com_____	re_____er
any_____	hard_____	_____less	_____iety	com_____ison	re_____able
no_____	_____house	_____lessly	_____ation	com_____able	re_____ation

8 Rewrite the first three words adding **y**, and the second three words adding **ly**. Finish the sentence below.

y ware _____ scare _____ glare _____ **ly** bare _____ rare _____ scarce _____

When adding _____, we removed the letter **e**. When adding _____, we kept the letter **e**.

9 Complete the table. Use your dictionary for correct spelling. Finish the sentences with some of the words.

Fill the empty sound boxes in the sentences below.

base word	ed added	ing added
star		
stare		
scar		
scare		
spar		
spare		

The man felt very _____ as he _____ in surprise at the huge, polar bear rising out of the snow.

My favourite actor _____ in that movie.

The boxers had a _____ practice before the world title match began.


The horrific burns from the bushfire have healed but my arms have been left badly _____.


After words with **C** _____ we wrote **rr** before adding **ed** and **ing**.

After words with **C** _____ we removed the letter **e** before adding **ed** and **ing**.

10 Fill the empty sound boxes to represent the sounds you hear in each homograph.

A large **tear** rolled down the lost little boy's cheek.  **t t** **C** _____

We helped Mum **tear** up the old towels to use as cleaning cloths.  **t t** **C** _____

11 Finish the homophones in the sentences with graphemes for  **air are**.

Everyone who comes up our st_ _ _s stops and st_ _ _s at our very unusual door knocker.

The hunter with the long, curly h_ _ _ caught a h_ _ _ in a trap and cooked it for his dinner.

We found a knife to p_ _ _ a p_ _ _ of p_ _ _s for the fruit salad.

The m_ _ _ _ of the city council entered a very fast m_ _ _ _ in the horse race.

There is a lovely fl_ _ _ of colour on the material for the girl with a fl_ _ _ for dress designing.

Wh_ _ _ could I w_ _ _ the overalls I can buy at the hardw_ _ _ shop while w_ _ _ buying paint?

The big grizzly b_ _ _ had a b_ _ _ patch on its back where all the fur had rubbed off.

The f_ _ _ for the train trip to the carnival f_ _ _ grounds did not cost very much.

Th_ _ _' _ _ taking th_ _ _ bags with them so they can eat th_ _ _ lunch while they are th_ _ _ .

Prince Charles is the _ _ _ _ to the English throne. He is often outdoors in the fresh _ _ _ . (air, heir)



Challenge

Write as many List Words as possible using only the letters in the box. You can only use a letter twice if there are two in the box.

a c e e g h i l m n o p r r s t u v y