

INSPIRE COMPUTING

International

Workbook

YEAR 4

Name: _____

Class: _____

INSPIRE COMPUTING

International

Workbook

YEAR 4

Sabiha Munshi

Series editor: Paul Clowrey



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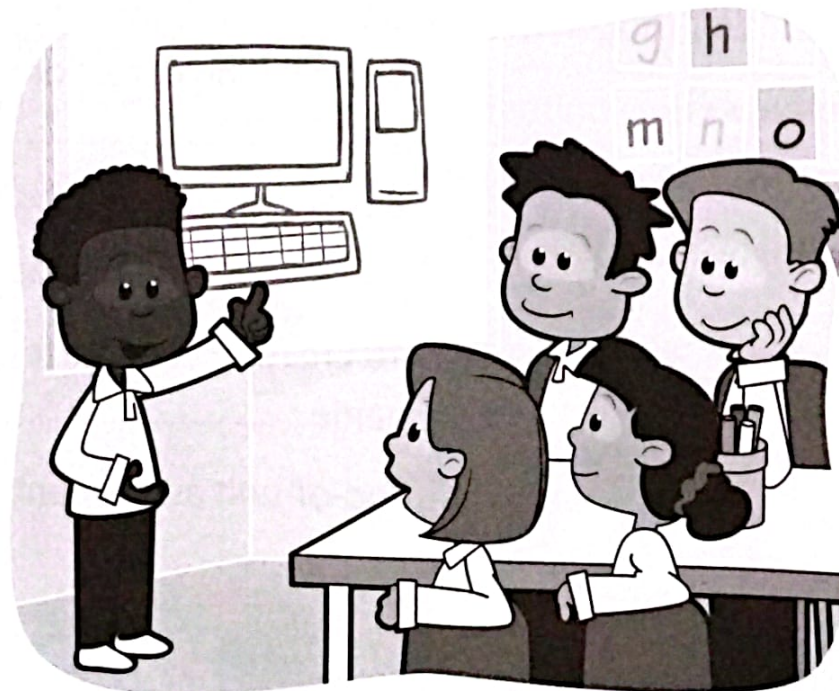
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Welcome to Inspire Computing

We are all living in a continually evolving digital world. By supporting learners in becoming confident and knowledgeable users of technology we can ensure you are prepared for the future.

Inspire Computing makes important topics accessible for all learners. You will understand how to stay safe online while still enjoying the freedom to explore the World Wide Web. You will delve deeper into understanding algorithms through creative approaches, exploring networks and systems, and create and film exciting animation projects!

Each topic includes easy to understand theory, real-world examples, and ideas for further investigation. You will also have the chance to show off your knowledge and understanding through supportive assessments and student checkpoints!



Graphic file formats

- 1.** Read the information below and colour in the grid.
- a) The first number in each sequence tells you the number of white squares or pixels that there will be (from the left of the grid).
 - b) The next number in each sequence means the number of black pixels to be coloured in.
 - c) If the first number is a 0, then the first pixel is black.
- For example:
- 1, 2, 1, 2 = (1 x White), (2 x Black), (1 x White), (2 x Black)
- 0, 1, 1, 1, 2 = (1 x Black), (1 x White), (1 x Black), (2 x White)

Challenge yourself using pixel art software to draw:

- [illegible]

End-of-unit assessment

- A pixies
- B resolution
- C captions
- D dots
- E pixels
- F highlights

2 Read the statements about the copyright of images and text. Complete the table below.

(3 marks)

Unit 3 End-of-unit assessment

- I can plan, draft and create a news article using desktop publishing applications.

			☐
			☐
			☐
			☐
			☐

Unit 1

Online safety

In this unit you will learn about the form of inappropriate online behaviour known as cyberbullying. You will learn ways to identify it and discuss what to do if it happens to you or your friends.

Then you will practise your learning by planning, scripting and recording a green screen video. You will use cropping and merging skills to edit your video.

Lesson 1



Explaining e-safety

- I. Look at the table below about sharing information online.
Put a tick ✓ next to things that are safe to share online.
Put a cross ✗ next to things that are not safe to share online.

	✓ ✗		✓ ✗
my first name		my first and last name	
the school I go to		the city or town I live in	
the country I live in		my road name and house number	
my telephone number		my favourite colour	
a photo of me in my school uniform		my favourite hobbies	
my email address		the name of my pet	
the name of somewhere I have visited		my eye colour	
the title of my favourite book		the name of my favourite band	
my parents' or carers' names		the colour and make of my family car	

Extra activity

Think of an app or website that you use. In your notebook, write what you do to make sure you stay safe online while using it.

Lesson 2



What is cyberbullying?

1. a) Think about what bullying is. Write down your ideas or share them with a partner.

- b) Next, think about what cyberbullying might be. Write down your ideas or share them with a partner.

- c) Write down the definition of cyberbullying that you have decided on.

Cyberbullying is _____

2. Acts of cyberbullying

- spreading rumours and gossip about someone
- sharing unkind pictures of someone to lots of people
- saying something unkind to someone when you are angry and upset
- posting unkind messages about someone in a messaging app

Choose one of the bullying behaviours above. In your notebook, write a short description of that kind of behaviour and how you think it might make someone feel. Then describe how you could help that person.



Lesson 3

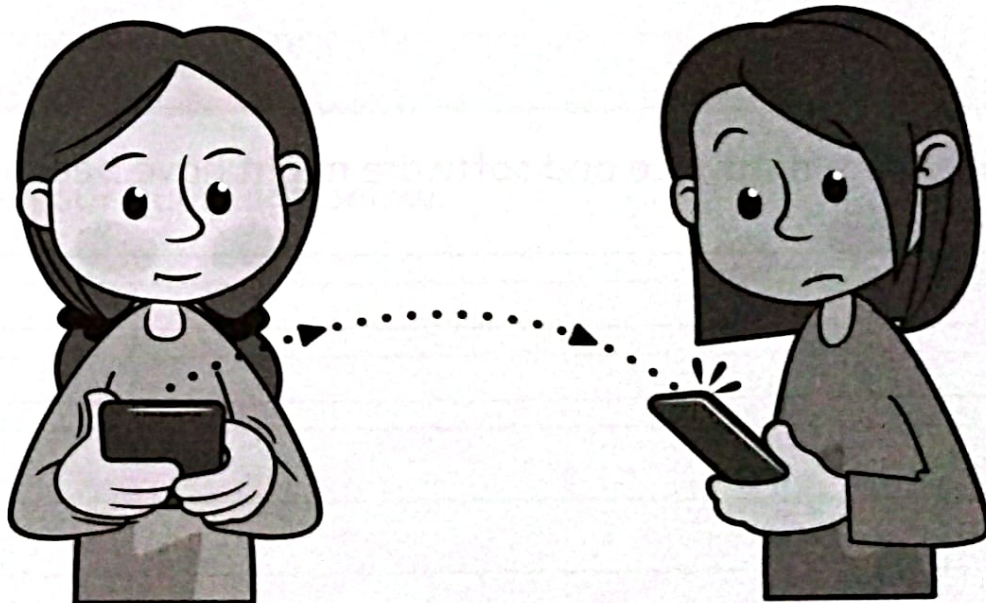
Exploring what cyberbullying looks like

1. Complete the description of cyberbullying below. Use the words in the word bank to help you.

Word bank

games hurtful internet person unkind

Cyberbullying is when someone uses an _____ connected device to be _____ to another _____. This might be to send _____ emails, photos or messages through messaging apps or online _____.



2. Read through the problem and answer the questions below. Use the words in the word bank to help you.

Word bank

afraid behaviour bully emotional frighten hurt
lonely physical scared threaten

Problem

Huifen enjoys using social media to send messages and pictures to friends and family. Recently, someone with the username N0T2NIC3 has been posting horrible messages on her page, using rude words. They have said they know Huifen and she is worried that it could be someone in her class. She is now feeling scared about going to school. She hasn't told anyone yet because she hopes that the person will get bored and go away.

- a) How do you think Huifen feels? Explain why.

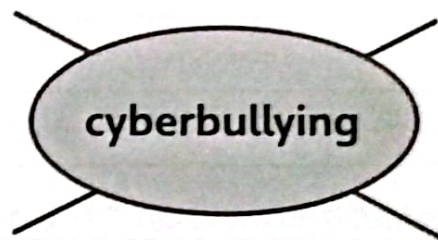
- b) What hardware and software might have been used?



Lesson 4

Knowing what to do if someone is being cyberbullied

1. Make a mind map to show what you remember about cyberbullying.



2. Read about Huifen's problem in Lesson 3 again. Think of two questions that you could ask someone who has been cyberbullied.

Tip

- Think about the person's feelings when you choose your questions.

Write your questions below.

1 _____

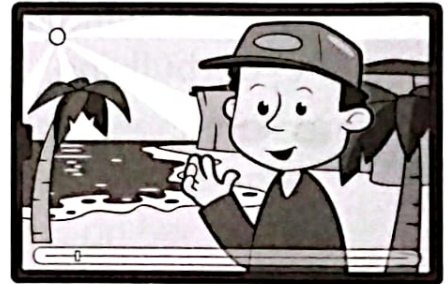
2 _____



Lesson 5

Creating a green screen video about cyberbullying

1. Write down what you remember about green screen videoing.



2. With a partner, explore green screen videoing software and write notes about it below and on the next page.

Tip

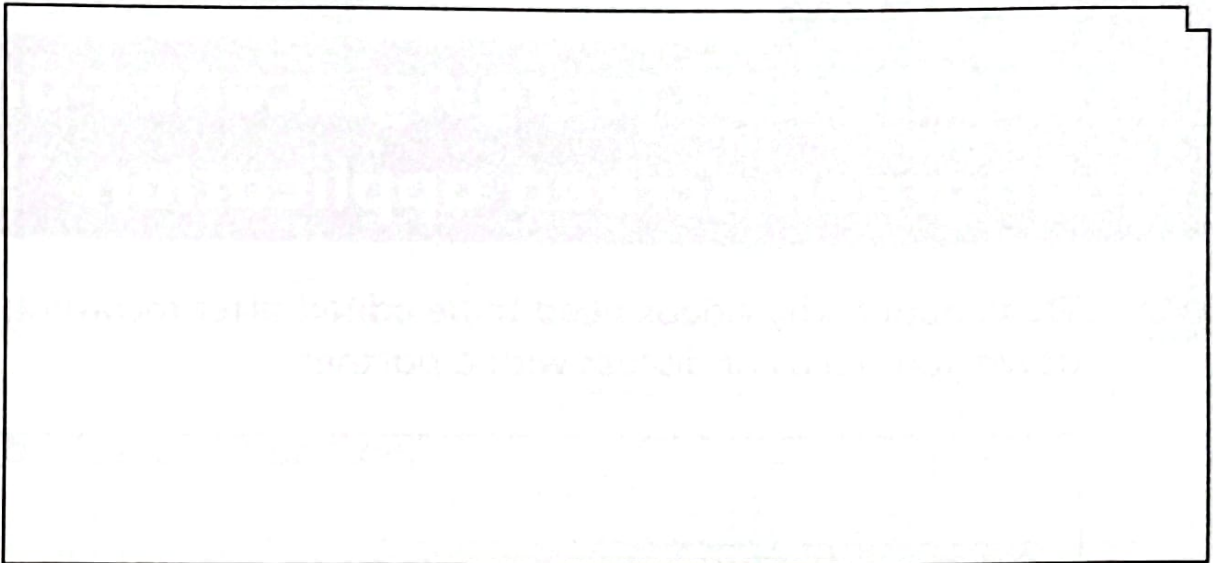
- Notes can be symbols or writing. For example:

This is what you press...

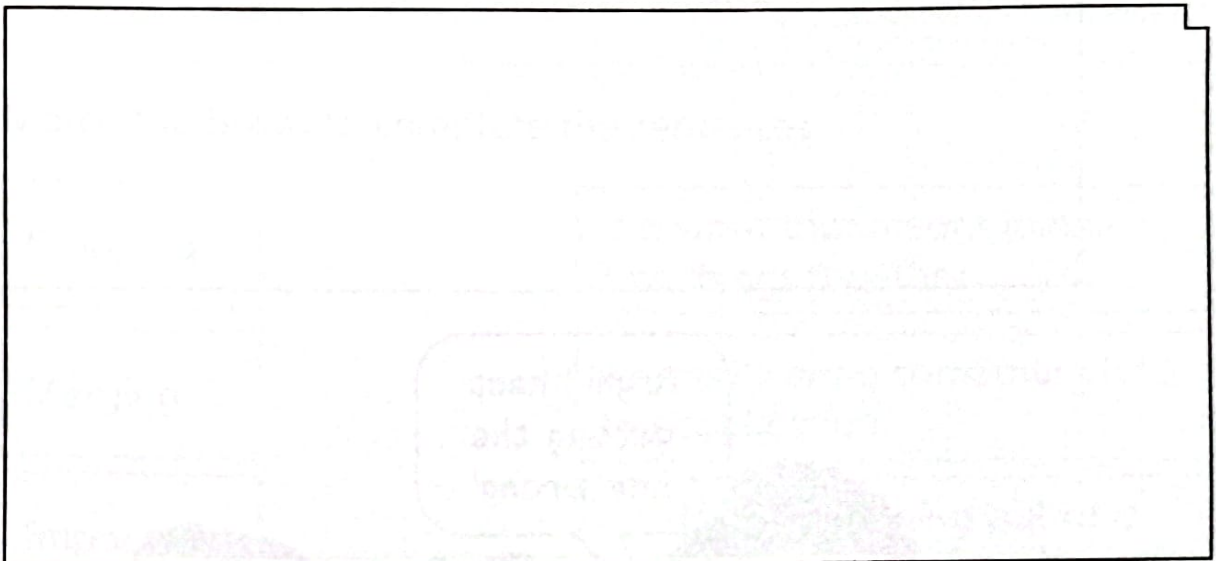


- a) features that you remember how to use:

b) features that you remember, but you are not sure how to use:



c) features that you do not remember or have not seen before:



Extra activity

Be an expert! Show a partner how to use a feature that you remember.





Lesson 6

Cropping and merging scenes on your green screen application

1. Think about why videos need to be edited after recording. Write down your ideas or discuss with a partner.



2. Imagine that you are recording a video and a noisy bird flies overhead.

a) What has gone wrong?

b) How can it be fixed?

3. Match the boxes to complete the sentences.

Cropping

is a word that means joining two things together.

Merging

means to bring something into the application.

Importing

is cutting something out of a picture or video.



Lesson 7

Planning a recording script

- I. Write a script for your green screen video.

Step 1: Use this problem as the basis of your script:

At a birthday party, Adam accidentally spilt juice all over his clothes. When he got back to school, he found out that someone had taken a photo of him at the party covered in juice and had posted it on social media as an unkind meme.

Adam wants to tell someone but is really embarrassed about the picture. Adam writes down what he wants to say and rehearses it in front of the camera.

Step 2: Using the success criteria below, write a short script for the problem.

I have:	✓
written a scene description	
written stage directions, for example: [<i>walks away</i>]	
written words for the character to say	
used adverbs in my stage directions to help the character know how to say things, for example: <i>kindly, quietly, threateningly</i>	

Tip

- Do not forget to add stage directions to tell the actors what to do! This is important even if there is just one character in the scene. For example:

Adam: I'm so upset! [*walks away towards the front entrance*]

The character in my script is: _____

The setting for my script is: _____

Name of character: _____

Script for character: _____

If you need more space you can use your device or your notebook.

2. Practise reading through your script. Try to:

- learn the lines so you do not have to read them
- change your expression and tone of voice to show how the character feels.

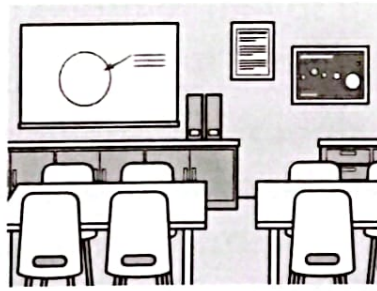
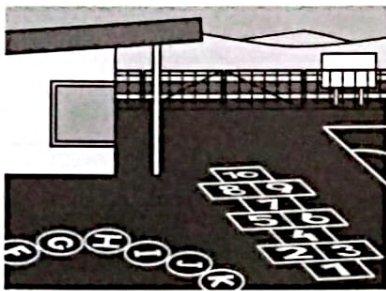


Lesson 8

Designing the backdrop for your green screen video

- I. Create a green screen backdrop for the script you wrote in Lesson 7.

Step 1: Think about which scenes you will need for your video.



Step 2: List the backdrops that you will need and where you will find these. You could make them using software.

Backdrop needed	Where will you get this from?

Step 3: Create your backdrops.

Tip

- Don't take photos that have people in the background!

Lesson 9



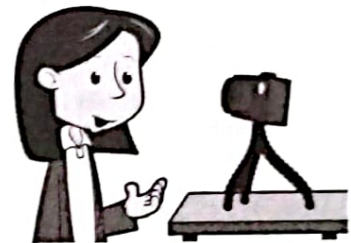
Recording your green screen video

1. Record the script you wrote in Lesson 7.

Step 1: Learn your lines but keep a copy of your script near you if you need a cue.

Step 2: Choose the right backdrop from Lesson 8.

Step 3: Set up the scene and the camera, and record your video.



2. Play back your video. List any cropping or merging edits that you need to make.

Tips

- Keep your camera still.
- Don't cover your microphone.
- Speak in a loud, clear voice.
- Look directly at the camera.
- Use actions.
- Make sure your whole background is green.
- Plan what you need to say and use your script.

Lesson 10



Completing your green screen video

1. Edit your video on cyberbullying by using editing software.

Step 1: Read the list of editing tasks that you created at the end of Lesson 9.

Step 2: Check if there is anything you have missed out.

Step 3: Use the cropping and merging tools on your video editing software to make any changes.

2. Think about your video. Complete the video assessment.

Video assessment

What did you think was best about the video?

Did the green screen backdrop suit the video?

Did the video make the story of the cyberbullying clear?

How could the video be improved?

Unit 1

End-of-unit assessment

1 Karla gets a message from some friends. The message says unkind things about another student. What should Karla do?

- A Send a message back saying it is funny but do not tell anyone – it is just a joke. ☐
- B Send the message to everyone because it is funny. ☐
- C Do not send it to anyone, but tell your parents or carers and your teacher. ☐
- D Do not send it to anyone, but tell your closest friend and a teacher. ☐

(1 mark)

2 What is cyberbullying?

- A a type of bullying where people call each other names and physically hurt them ☐
- B a type of online bullying that happens on digital devices like smartphones and tablets ☐
- C a type of bullying where people share pictures with each other ☐
- D a type of online bullying that only takes place on a gaming site ☐

(1 mark)

3 Which multi-role device would be a good choice for creating a green screen project?

A a printer

B a camera

C a tablet computer

D speakers

☐☐☐☐

(1 mark)

4 What does the trim tool do in a green screen application?

A It deletes everything on the page.

B It cuts out the image, leaving a blank part.

C It splits your pictures or film into two parts.

D It deletes part of the clip from the red line onwards.

☐☐☐☐

(1 mark)

5 What does the split tool do in a green screen application?

A It splits the backdrop in two places.

B It splits the green screen in two places.

C It splits the video file in two places.

D It splits the timing in two places.

☐☐☐☐

(1 mark)

Unit 1 Checkpoints

I know what e-safety means (and know what is safe to share and what is not).	 <input data-bbox="1324 324 1396 392" type="checkbox"/>  <input data-bbox="1324 414 1396 481" type="checkbox"/>  <input data-bbox="1324 504 1396 571" type="checkbox"/>
I can recognise unacceptable behaviour and report my concerns (content, conduct and contact).	 <input data-bbox="1324 616 1396 683" type="checkbox"/>  <input data-bbox="1324 705 1396 772" type="checkbox"/>  <input data-bbox="1324 795 1396 862" type="checkbox"/>
I know the difference between bullying and cyberbullying.	 <input data-bbox="1324 907 1396 974" type="checkbox"/>  <input data-bbox="1324 996 1396 1064" type="checkbox"/>  <input data-bbox="1324 1086 1396 1153" type="checkbox"/>
I know how to crop and merge videos using green screen software.	 <input data-bbox="1324 1198 1396 1265" type="checkbox"/>  <input data-bbox="1324 1288 1396 1355" type="checkbox"/>  <input data-bbox="1324 1377 1396 1444" type="checkbox"/>
I can create and edit a green screen video about cyberbullying.	 <input data-bbox="1324 1489 1396 1556" type="checkbox"/>  <input data-bbox="1324 1579 1396 1646" type="checkbox"/>  <input data-bbox="1324 1668 1396 1736" type="checkbox"/>

Unit 2

Searching and comparing

In this unit you will develop your understanding of how search engines can be used well, using commands that help make your searches more effective.

You will start by thinking about the reliability of online information and whether sources of information can be trusted. To help you find better results, you will learn how to use advanced search techniques.

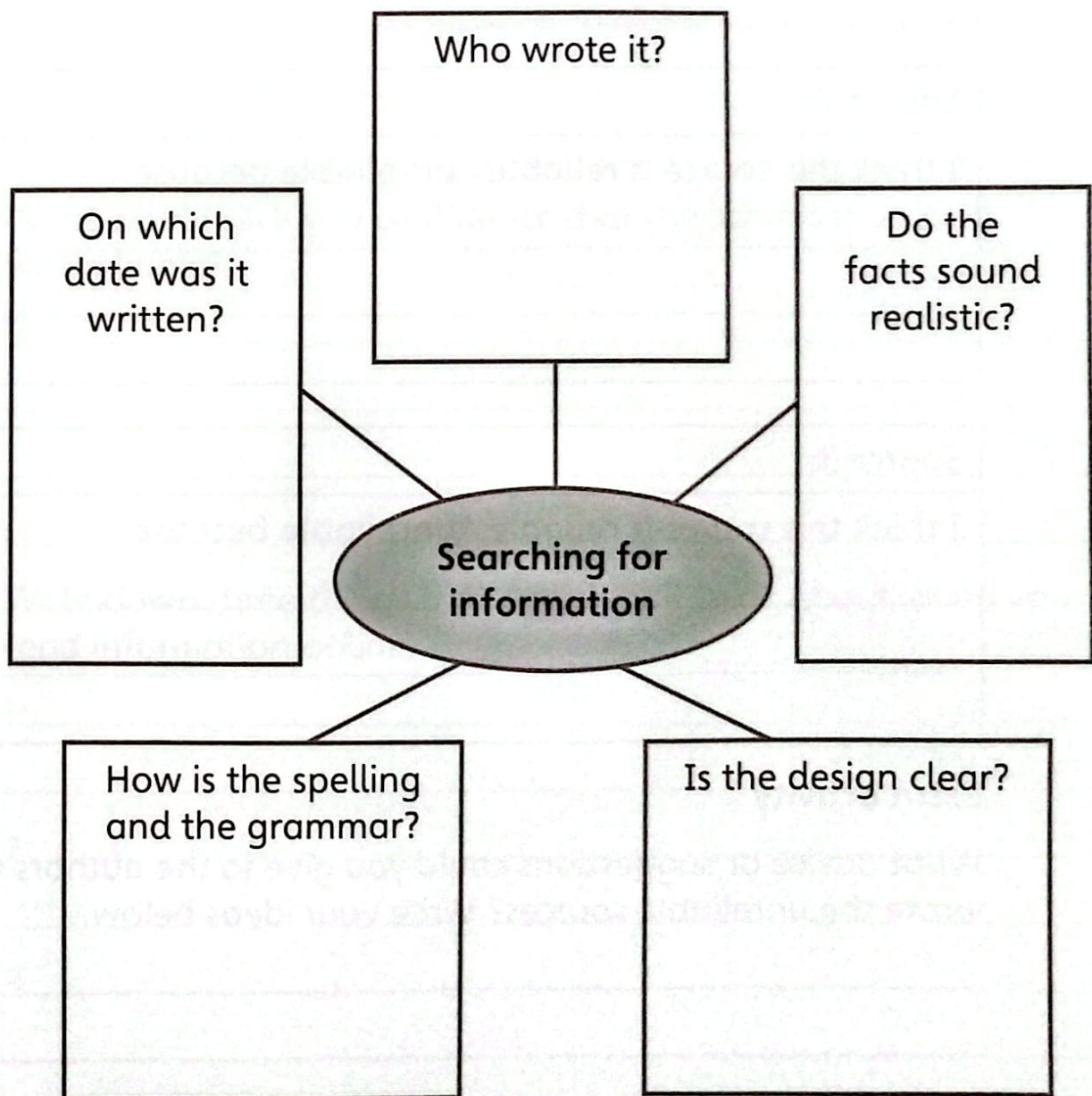
You will also learn about tables and how to put them into a text document and format them to help present the text. Finally, you will use these skills to plan and present a research topic.



Lesson 1

How do I know if an online source is reliable?

- I. Talk to your partner about what you remember about searching the internet for information. Look at the questions and add your ideas to the mind map.



2. Look at some examples of information sources that your teacher gives you. For each source, fill in the boxes below. Circle whether you think the sources are reliable or unreliable and write reasons why.

Source 1:

I think this source is **reliable** / **unreliable** because

Source 2:

I think this source is **reliable** / **unreliable** because

Source 3:

I think this source is **reliable** / **unreliable** because

Extra activity

What advice or suggestions could you give to the authors who wrote the unreliable sources? Write your ideas below.



Lesson 2

Understanding how to question information

1. When you visit a website, what might suggest to you that the information on it was not reliable?

2. What would give you confidence that the information on it was reliable?

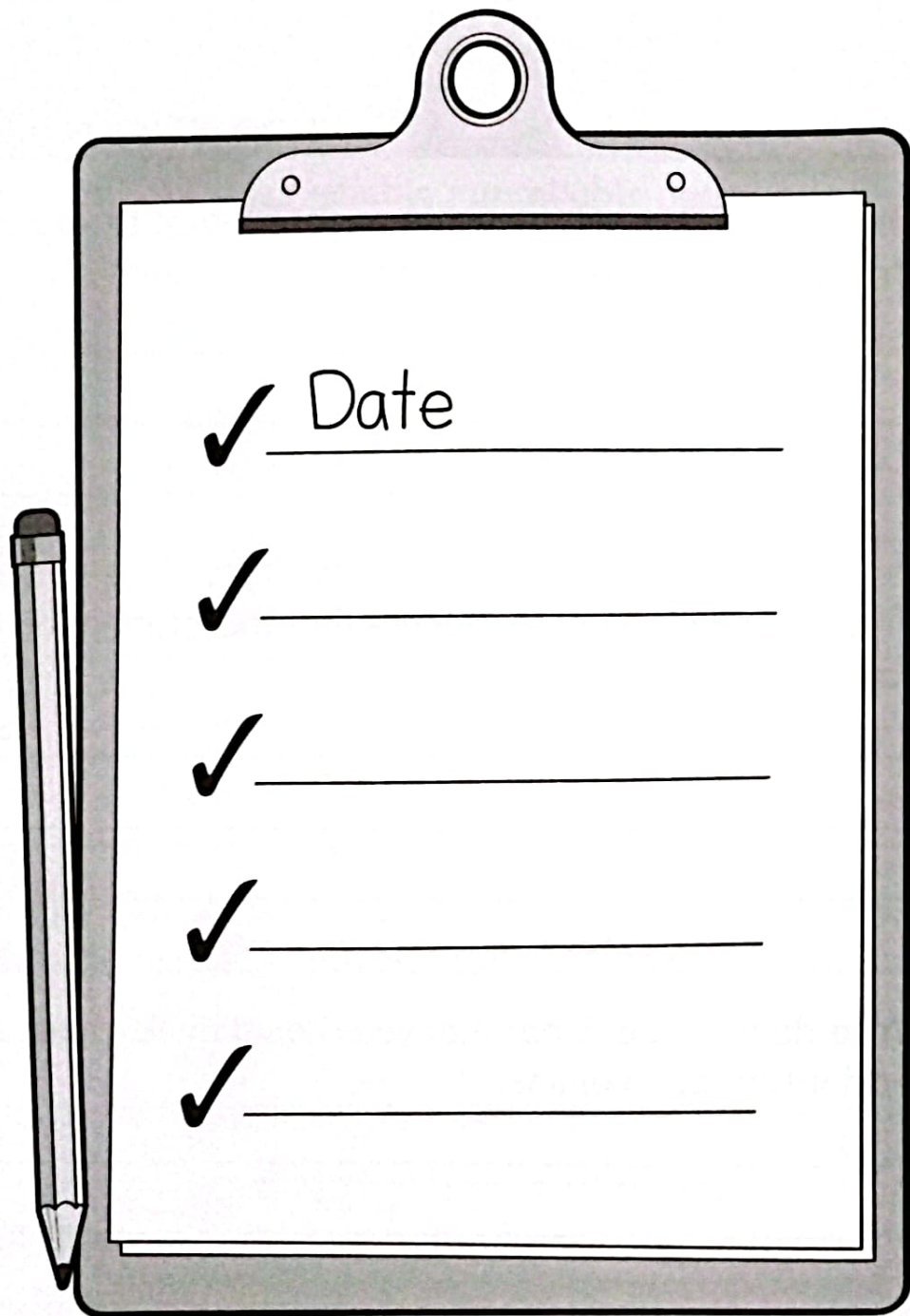
3. Write down three things that you should think about when you read information online.

1

2

3

4. Fill out the checklist below with what you need to make sure a source is reliable. The first one has been done for you.



A clipboard with a silver clip at the top and a pencil on the left. The clipboard contains a checklist with five items, each preceded by a checkmark. The first item is 'Date' followed by a horizontal line. The other four items are represented by checkmarks followed by horizontal lines.

- ✓ Date _____
- ✓ _____
- ✓ _____
- ✓ _____
- ✓ _____

Lesson 3

Creating a table



1. Match the key words to the definitions.

cell

a group of cells going vertically down the table

row

a single rectangle block

column

a group of cells going horizontally across the table

2. How many rows and columns do each of the following tables contain?

a)

rows: _____

columns: _____

b)

rows: _____

columns: _____

c)

rows: _____

columns: _____

3.

Name the tool that has been used on the right-hand column of the table below.

4.

In the table below, each of the cells below the days of the week should be divided into three columns.

	Monday	Tuesday	Wednesday	Thursday	Friday
Time spent					

a) Name the tool that can be used to do this.

b) In the space below, draw how this will look.



Lesson 4

How to edit a table

1. Think of two reasons when a table might be useful to show information.

- _____
- _____

2. Match the key words to the definitions.

border

used to change the font, style and colour of text in a table

alignment

a line added around the edge of a table or cell

format text

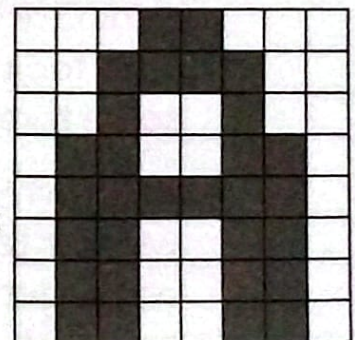
the position of text inside a cell

3. At the side of each row, write what formatting has been applied.

Cars	Bikes	Vans
12	3	4
32	2	2
17	1	6

Extra activity

Make a table that is 8 columns wide by 8 rows high. Using the background fill tool, create your initial or a face emoji in it, like this example for the letter A.



Lesson 5



Understanding bias

1. Read the two football reports below. Think about how the reports are similar and how they are different.

Football Report 1

Redtown FC 3 – 1 Park City United

A wonderful performance from Redtown FC saw them power to the next round after beating Park City United with ease.

An amazing first goal came from the fantastic Omar Khalil after just three minutes, followed by a second one shortly after by top goal scorer Adam Hassan.

Jamal Hariri from Park City managed to score before Jianyu Chen added a superb third goal.

Football Report 2

Redtown FC 3 – 1 Park City United

Redtown FC made it through after a very weak performance from Park City United.

Park City United didn't pose a real threat to Redtown FC, who took advantage of Park City United's poor defence to score three goals.

Redtown FC have somehow been very lucky in playing weaker teams. However, poor management means they never get past the semi-finals.

a) Which report is written by a fan of Redtown FC?

b) How do you know?

c) What words are used to describe Redtown FC in Report 1?

d) What words are used to describe Redtown FC in Report 2?

e) How does this change how the reader feels about their win?

f) Who would enjoy reading Report 1?

g) Who would enjoy reading Report 2?

h) Write one fact from the two reports you have read and compared.

2. Look at the scenarios below and answer the questions.

Scenario 1

Layla and Abu are having a running race.

They both start the race well, but Abu falls over and Layla wins.

	Layla	Abu
What do they think happened?		
How are they feeling?		
How do they see the events differently?		

Scenario 2

Sofia is meant to meet up with her friend Yusuf for lunch. Yusuf doesn't get there because his bus breaks down.

He doesn't have any way of contacting Sofia, so Sofia thinks Yusuf just hasn't bothered coming!

	Sofia	Yusuf
What do they think happened?		
How are they feeling?		
How do they see the events differently?		



Lesson 6

Using more complex search techniques (part 1)

1. Think about what a search engine is.
Write some key words or notes below.

2. Use a search engine to type in these key words:

city landmark mountain ocean

Challenge 1: Search key words with inverted commas.

"pyramids Egypt"



Challenge 2: Search key words without inverted commas.

pyramids Egypt



With a partner, discuss what you notice about the results.

- What do you notice about the search results?
- How are the top three results similar?
- How are they different?

Extra activity

On a piece of paper, make a poster explaining how to use inverted commas and the word 'define' in a search engine.



Lesson 7

Using more complex search techniques (part 2)

1. Write down two kinds of search techniques that you learned last lesson.

- _____
- _____

Think about:

- what they do
- why we might use them
- when it might be useful to use them.

2. Match the search engine techniques to the correct descriptions.

"inverted commas"

used to search for a synonym of any search term

minus symbol -

used to search for an exact phrase or multiple word search

tilde symbol ~

excludes any particular word from search results when using more than one word

3. Below are a range of sample web searches.

a) Complete the three search examples below and describe a typical website you find in the results.

Search	Describe a typical result
animals tigers	
animals -tigers	
International space station	
"International space station"	
adventure	
~adventure	

b) Share your results with other students.

- Are their results the same as yours?
- If they are different, why is that?

Extra activity

If you started the Extra activity in Lesson 6, add information about the minus symbol to your poster.

Lesson 8



Planning your research project

1. Write down the curriculum topic that your research project will be about:

2. Make a mind map showing what you know about your topic.

Tip

- Add simple key words and anything that will help with your research.

3. List some parts of your topic that you will research.

- _____
- _____
- _____
- _____

4. Test your planned key words and commands in a search engine.

Think about:

- if you could use different words to make your search more accurate
- if you could leave out some words to make your search more accurate.



Extra activity

Find books that could help you learn about your topic.

Add any new search words to Activity 3 above.



Lesson 9

Using a search engine efficiently

1. Write the name of the term described in the statements below.
- a) Rewriting information you research online to make sure you are not copying it. _____
 - b) The ability to run more than one application at the same time. _____
 - c) Copying someone else's work and saying it is your own.

2. Isobel has started collecting research in the table below, but cannot decide on suitable headings. Add some suitable headings to the top row of the table.

Facts on Triceratops	https://www.nhm.ac.uk/discover/dino-directory.html	London Natural History Museum	Seems well presented and unbiased

Lesson 10



Presenting your research

1. List some ways that you could present your research below.

Tip

- Think about all your previous learning and how you have presented projects – this should help you with your ideas!

- _____
- _____
- _____
- _____
- _____
- _____

2. Begin to create your presentation. To help you, think about what you would tell your partner or an adult about your project.

3. Share your research and presentation with a partner or adult.



4. Review your presentation and think about what you might do better next time.

Unit 2

End-of-unit assessment

1 Which of these might mean that information on a website is **not** reliable?

A It was written by an expert.

☐

B It shows only facts, not opinions.

☐

C It was written a long time ago.

☐

D The spelling and grammar are correct.

☐

(1 mark)

2 Sofia has used a minus symbol (-) before some words when searching for information using a search engine. What will this do?

wild animals -tiger -lion

A It makes the search faster.

☐

B It searches for wild animals, tiger and lion.

☐

C It slows down the search.

☐

D It searches for wild animals but does not search for tiger and lion.

☐

(1 mark)

3 Look at the table below.

Student name	Favourite food	X
Student 1	pizza	horse
Student 2	chicken with vegetables	cat
Student 3	cake	birds

a) What would be the best title to type in the cell labelled X in the table?

- A Friends
- B Hobbies
- C Favourite animal
- D Wild creatures

☐
☐
☐
☐

b) What do you call the group of cells above that are shaded in grey?

- A a row
- B a column
- C a cell
- D a table

☐
☐
☐
☐

(2 marks)

4 What happens in a table when you merge cells together?

(1 mark)

Unit 2 Checkpoints

I understand how to check if information online is reliable by asking critical questions.	 <input data-bbox="1315 309 1385 376" type="checkbox"/>  <input data-bbox="1315 389 1385 456" type="checkbox"/>  <input data-bbox="1315 470 1385 537" type="checkbox"/>
I know what cells, rows and columns are in a table.	 <input data-bbox="1315 589 1385 656" type="checkbox"/>  <input data-bbox="1315 669 1385 736" type="checkbox"/>  <input data-bbox="1315 750 1385 817" type="checkbox"/>
I can add rows and columns to a table, and I can merge and split cells.	 <input data-bbox="1315 869 1385 936" type="checkbox"/>  <input data-bbox="1315 949 1385 1016" type="checkbox"/>  <input data-bbox="1315 1030 1385 1097" type="checkbox"/>
I can use advanced search features like inverted commas, the minus symbol (-) and the tilde symbol (~).	 <input data-bbox="1315 1149 1385 1216" type="checkbox"/>  <input data-bbox="1315 1229 1385 1296" type="checkbox"/>  <input data-bbox="1315 1310 1385 1377" type="checkbox"/>
I can research projects using appropriate software and I can use search engines well.	 <input data-bbox="1315 1429 1385 1496" type="checkbox"/>  <input data-bbox="1315 1509 1385 1576" type="checkbox"/>  <input data-bbox="1315 1590 1385 1657" type="checkbox"/>

Unit 3

Desktop publishing

In this unit you will develop your understanding of the different tools in desktop publishing applications. You will learn how to insert text boxes, images and shapes into text documents and how to edit them in different ways.

Next, you will learn how to shade, rotate and resize text boxes, rotate and resize images and shapes, and also how to edit digital shapes.

You will also learn about layers of objects and how to group lots of objects together. As you develop these skills you will plan, draft and write a news article about an event that has taken place.

Lesson 1



Recognising the features of a news article

I. Read the news article.

1.50

The Daily News

City News Agency • May 30

The great four-day cat rescue!

Local area brought to a halt after cat gets stuck in towering tree.

By Rukmini Anand

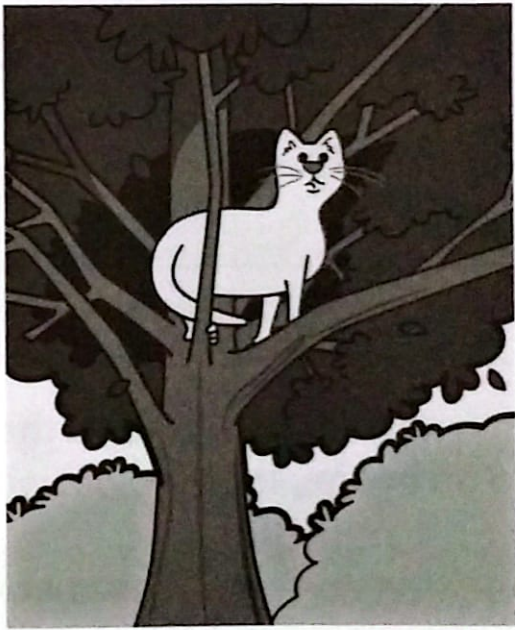
A cat stuck up a tree in a busy area of Cairo for 96 hours has finally been rescued. This was after locals asked for the help of an animal society, the emergency services and a local building company.

People living in the area spotted the small animal, called Mimi, at the top of a tree on Thursday, September 22. They spent four days trying to get her down before she was eventually rescued by the emergency services on Tuesday evening.

Hannah Ahmed, who lives nearby, asked local workers to help, after hearing the cat while she was out shopping in the market.

Workers from Safwa Building Company had left food and water at the bottom of the tree, but failed to convince the cat to leave its hiding spot.

Posting on social media, the company said on Friday, "We are trying our very hardest to rescue this cat. We have had no joy in getting the cat down tonight. We left her some water and food and will be back tomorrow."



Tense moments for the locals as cat stuck up a tree.

They were happy when rescuer Khalid Adam reached the ground with Mimi safe and sound after her big adventure.

Mimi's owner, Taalat Amin, was over the moon to see her again. "I'm so grateful to everyone who helped rescue her," he said.

Identify and label the key features of the news article you have just read. The headline A has already been labelled for you.

- A headline
- B stand-first
- C author
- D date
- E photo/image/diagram
- F captions
- G article
- H paragraphs

2.

A news article is written in chronological order. What does this mean?

3.

In a news article, what is the name for the words below or next to an image, that explain what the image shows?



Lesson 2

Revisiting word processors and desktop publishing applications

- I. a) Design a poster showing all the key features of desktop publishing applications.

Include:

- examples of formatting tools like alignment, bold, italics, underline, bullet points, change font styles and size
- features like text boxes, shapes, images
- enter and edit text
- open a file, save and print
- cut, copy and paste
- check spelling and grammar.

b) Think about how the features on your desktop publishing application could be used to make a news article. Use the desktop publishing application to:

- make a large headline in a bold font
- insert an image
- start writing a section of an article
- add a date.



Lesson 3

Using text boxes

- I. A friend telephones you about some escaped animals at a local shopping arcade. She thought you would like to write an article about it.

Convert the story she tells you into the text boxes provided. Keep your notes brief but detailed.

"Last Sunday, when all the shops were shut at the Plaza shopping arcade, a cleaner accidentally left the pet shop open. Three parrots, ten mice and a cat all escaped and ran around the Plaza. Security guards were running around the arcade trying to catch them! The shopping arcade had to open late on Monday morning, because it took so long to catch them all!"

What happened?

Where did it happen?

When did it happen?

Why did it happen?

Who was there?

Who was affected?

2.

a) Using the information in Activity I, complete the table below.

Think about how you would write a news article about the event. Remember that you are telling the story to someone who does not know anything about it!

What is the first detail you would give in the article to get the reader's attention?	What is the second most important piece of information?
What further details would you give to help the reader understand what happened?	What other information might help the reader to imagine the event?
Is there any extra information that could help the reader?	What detail would you end the article with?

b) Think of a headline for your news article.

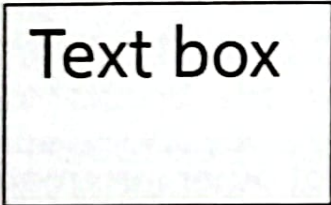


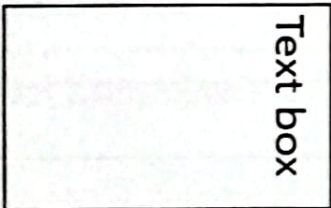
Lesson 4

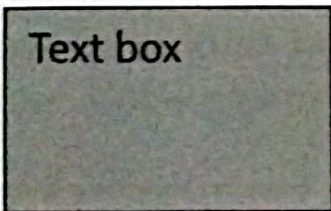
Creating and formatting text boxes

1. Starting with the plain text box shown, describe the tools used to create each of the following versions:

Text box

a) 

b) 

c) 

2. Describe one advantage of using text boxes for a news article instead of text typed straight onto the page.

3. Using a desktop publishing application, create a poster about yourself that uses text boxes to describe different things about you.

There is an example below, but you do not have to follow it exactly.

My name is and I am years old.	All about me
I live in, which is in	My favourite hobby is I like this hobby because
My pets I have a pet The best thing about my pet is	My family I live with my and I have brothers and sisters.

Lesson 5



Using appropriate images in news articles

1. Look back at Lesson 1. Then write down why you think the image of the cat in the tree was added to the article.

Can you think of other reasons why images are useful in a news article?

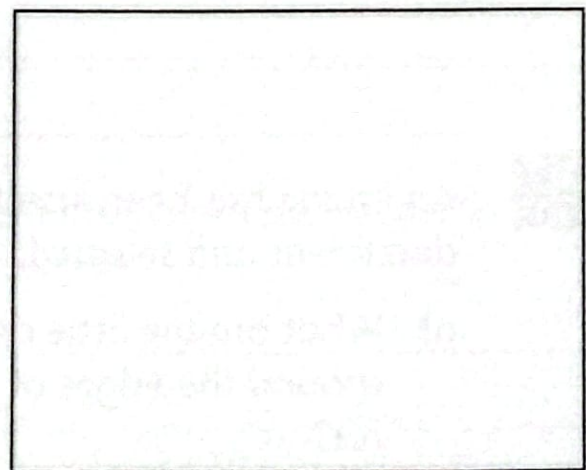
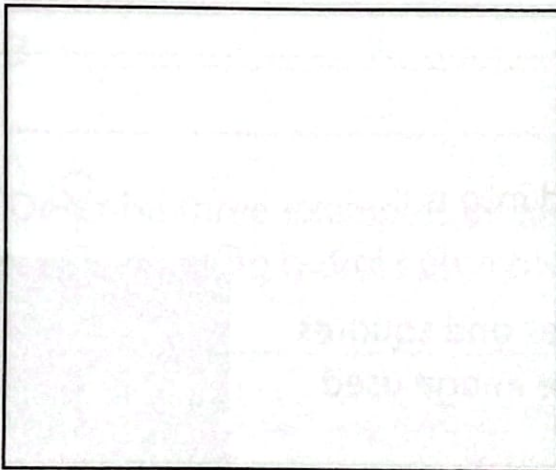
2. Look at your plan for a news article from Lesson 3. Write down the type of image, photo or diagram that could go with each section on your plan.

Which part of the plan is it?	What image could I include?
First detail: <i>escaped animals in the arcade.</i>	Picture of the the parrots, mice and cat.

Which part of the plan is it?	What image could I include?

3.

a) Look at your ideas from Activity 2 again. Which two images would best show the information in the whole article? Pick the best two and draw them below.



b) Write captions for your pictures above.

- _____
- _____

Lesson 6



Inserting and manipulating images and shapes

1. Think about the text boxes that you created in Lesson 4.

Think about how you were able to manipulate the size and position of them. How might this be useful when you are making your news article?

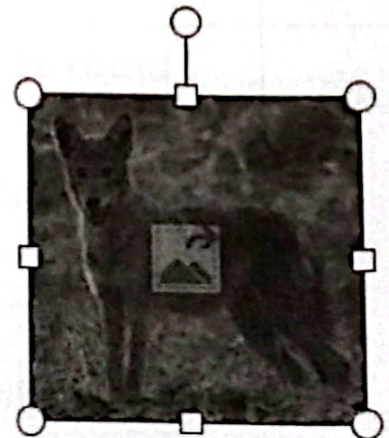
2. Describe the difference between the two options found in most desktop publishing applications:

insert from file

insert online image

3. An image has been inserted into a document and selected.

- a) What are the little circles and squares around the edges of the image used for?



- b) Look at the small circle above the top edge of the image in activity 3a. What is it used for?

4. When a formatting tool shows these thick black lines, what kind of changes can you make to the image?



5. List three different types of shape that can be inserted into a document.

1

2

3

6. Describe three examples of content that might be included when creating a draft plan of an article.

1

2

3

Lesson 7



Planning a news article

1. Think about the features of a news article.

List all the features that you can remember below.

2. Why is it helpful to first make a plan for any article?

3.

In the four boxes below, draw an idea for a news logo. Each one has a different theme.

World news

Computer technology

Sport and leisure

Entertainment news



Lesson 8

Adding layers to and grouping objects in a publishing application

1. Think about all the different ways to manipulate shapes and images that you have been learning about.

Make some notes about your ideas below.

2. Match the desktop publishing terms to the correct descriptions.

merge

placing one shape in front or behind another

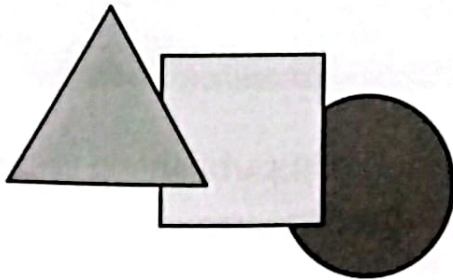
group

combining two or more shapes into a single shape

layering

linking separate shapes so they can be moved together

3. Describe the layering and formatting tools that have been used to create the image below.



4. Describe the difference between the following options:

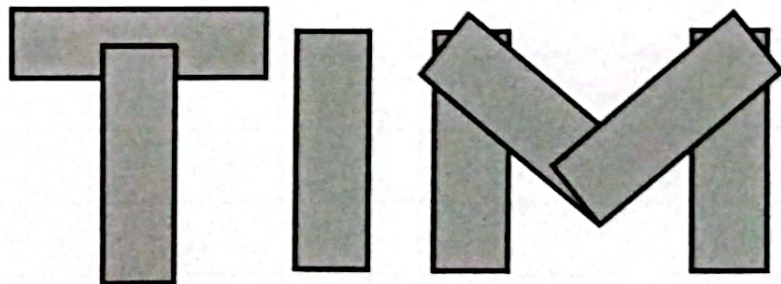
bring to front

bring forward

Extra activity

Create your own name or initials by inserting, rotating, grouping and layering.

For example:





Lesson 9

Drafting your article

1. Describe why people working in desktop publishing will first create a draft version of any document.

2. List some of the things that can be included in a draft version of a news article.



Lesson 10

Creating your article

1. Think about the skills you have learned in desktop publishing applications.

a) List two things you feel confident doing.

1 _____

2 _____

b) List two things that you would like to improve.

1 _____

2 _____

2. Desktop publishing experts create many types of document and are able to quickly spot mistakes in their own work, or in the work of others.

Think about the work you have done in this unit and come up with a list of mistakes you have made a few times. By getting to know common errors you are able to avoid doing them.

For example, always using 'there' instead of 'their'.

3. Think about the skills used in this unit. Match the desktop publishing skills to where they might be used.

insert a text box

to be able to move writing around the page

rotate a shape

to move several objects at once

add shading and borders

to turn a shape when creating a logo

group objects together

to create a coloured background for a page

4. Share the news article you created in Lesson 10 of the Student Book with others and ask for feedback.

What do they most like about your news article?



What do they think could be improved in your news article?

Unit 3

End-of-unit assessment

1 In desktop publishing applications, what does the crop tool do?

A It changes the colour of a shape.

☐

B It lets you cut parts from an image.

☐

C It deletes the image.

☐

D It makes the image brighter.

☐

(1 mark)

2 To format the colour of a shape, two options must be changed. What are the two options which need to be changed?

1 _____

2 _____

(2 marks)

3 Which of these options fits the sentence below best?

bullet points

cells

text boxes

transitions

Presentation software and word processing software have _____ . These let you add text and move them around to where you need them.

(1 mark)

4 A student is writing a news article with a mixture of pictures and text. Which application would be the best one to use?

- A a green screen application
- B a desktop publishing application
- C a word processing application
- D an internet search engine

☐
☐
☐
☐

(1 mark)

5 When inserting shapes into a project, new shapes appear to go behind the first shape. What could be done to correct this?

- A Nothing – you cannot fix it!
- B Select the shape and then select the 'bring forward' option from the option/format bar.
- C Copy and paste the shape again.
- D Rotate the shape.

☐
☐
☐
☐

(1 mark)

Unit 3 Checkpoints

I can recognise the main features of a news article.	 <input data-bbox="1295 309 1366 385" type="checkbox"/>  <input data-bbox="1295 398 1366 474" type="checkbox"/>  <input data-bbox="1295 488 1366 564" type="checkbox"/>
I can create and manipulate text boxes by changing the colour, rotating and resizing them.	 <input data-bbox="1295 600 1366 676" type="checkbox"/>  <input data-bbox="1295 689 1366 766" type="checkbox"/>  <input data-bbox="1295 779 1366 855" type="checkbox"/>
I can insert and manipulate images and shapes in a desktop publishing application.	 <input data-bbox="1295 891 1366 967" type="checkbox"/>  <input data-bbox="1295 981 1366 1057" type="checkbox"/>  <input data-bbox="1295 1070 1366 1146" type="checkbox"/>
I can create images using 2D shapes.	 <input data-bbox="1295 1182 1366 1258" type="checkbox"/>  <input data-bbox="1295 1272 1366 1348" type="checkbox"/>  <input data-bbox="1295 1361 1366 1438" type="checkbox"/>
I can plan, draft and create a news article using desktop publishing applications.	 <input data-bbox="1295 1473 1366 1550" type="checkbox"/>  <input data-bbox="1295 1563 1366 1639" type="checkbox"/>  <input data-bbox="1295 1653 1366 1729" type="checkbox"/>

Unit 4

Programming (part 1)

In this unit you will develop your understanding of algorithms and programming. You will learn about sequencing, repetition, selection and variable use in programming, through everyday examples.

You will design algorithms and turn these into code to use in programming software.

Throughout the unit, you will learn how to predict what algorithms do and explain why. Finally, you will write algorithms containing nested loops.



Lesson 1

Understanding what an algorithm is

1. Describe in your own words what an algorithm is.

2. The order in which an algorithm is carried out is known as the _____.

3. Turn the following instructions into simple algorithms.

- a)

Stand up and raise your left leg. While standing on one leg, wave at your partner and spell out your first name.

- b) After counting down from ten to zero, jump up and down five times before sitting down and closing your eyes.

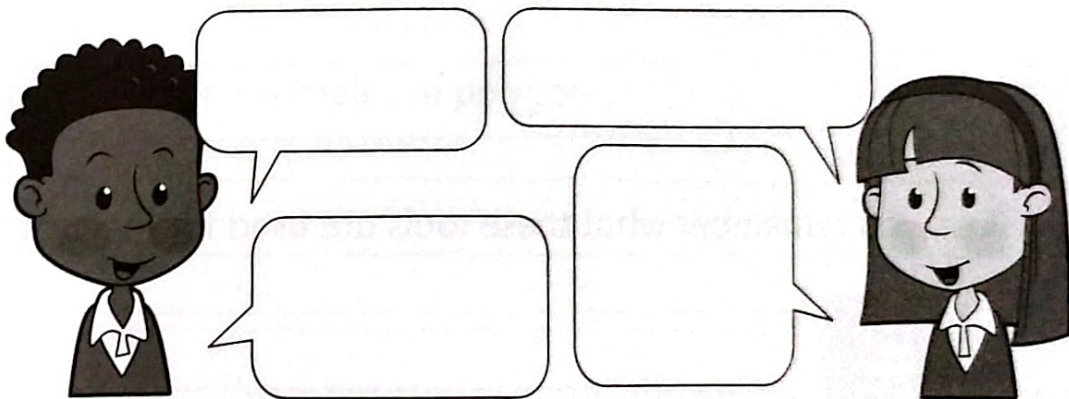
- c) Walk forward three steps, then turn to your right, wait for five seconds and then walk backward five steps.

Lesson 2



Using sequencing to create accurate algorithms

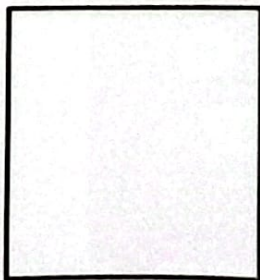
1. Think of the different algorithm vocabulary that you used in Lesson 1. Write four words you remember in the speech bubbles below.



2. Imagine you have a large pen to draw shapes with. Write an algorithm for each of the shapes shown, using the following commands:

- Forward (number) steps
- Backward (number) steps
- Turn to the right
- Turn to the left

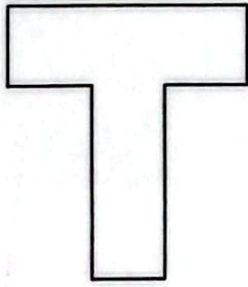
Shape 1



Algorithm sequence for shape 1:

_____	_____
_____	_____
_____	_____
_____	_____

Shape 2

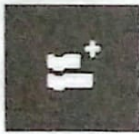


Algorithm sequence for shape 2:

3.

Can you remember what these tools are used for in Scratch?

a)



b)





Lesson 3

Predicting the outcome of a program

1. a) Explain what we mean by the term 'polygon'.

- b) List three examples of polygons.

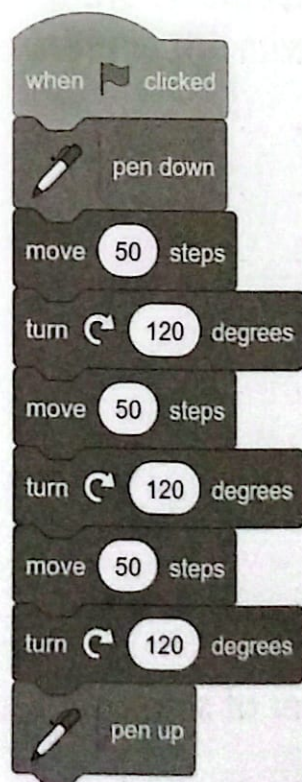
1

2

3

2. For each of three Scratch programs shown, predict the shape it will create and the number of sides it has.

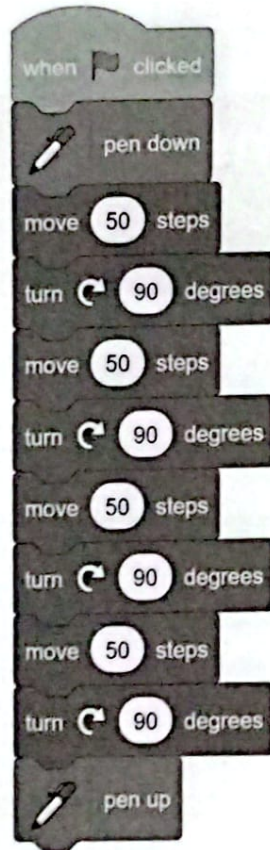
a)



Shape: _____

Number of sides: _____

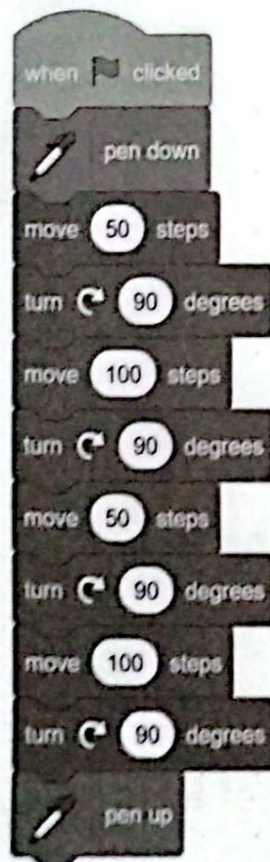
b)



Shape: _____

Number of sides: _____

c)



Shape: _____

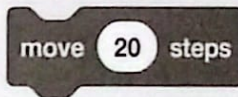
Number of sides: _____



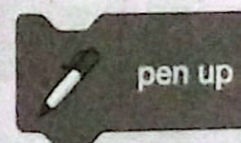
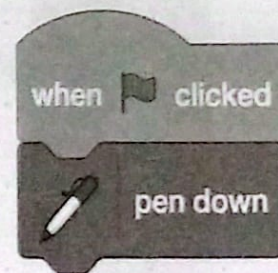
Lesson 4

Writing programs following a set of rules

1. How many degrees of either clockwise or anticlockwise turn are needed when drawing the following shapes?
 - a) a triangle _____
 - b) a rectangle _____
2. You have been asked to draw a line with a length of 100 steps but you can only use the following block:



Complete the Scratch program shown by sketching in the missing blocks.

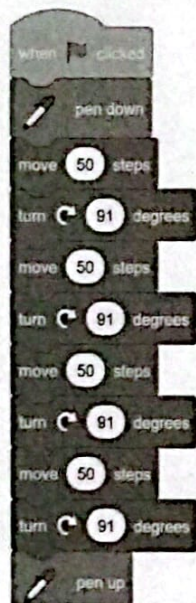


3. a) Explain what the term 'debugging' means.

b) List three common errors people make when using Scratch.

- 1 _____
- 2 _____
- 3 _____

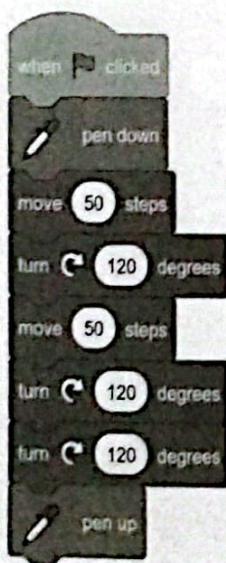
4. Use your debugging skills to find the bugs in the Scratch codes below.



Scratch code to create a square:

The bug I found is:

I think it should be:



Scratch code to create a triangle:

The bug I found is:

I think it should be:



Lessons 5 and 6

Understanding repetition in an algorithm

1. How can using repetition make an algorithm more efficient?

2. Match the boxes to complete the sentences.

Repeat

is a sequence that starts again from the beginning once it finishes.

Loop

is an action which is done more than once.

3. Rewrite the following algorithms to make them more efficient, using either a loop or a repeat.

a)

Stand	
Jump	
Touch toes	
Stand	
Jump	
Touch toes	
Stand	
Jump	
Touch toes	

b)

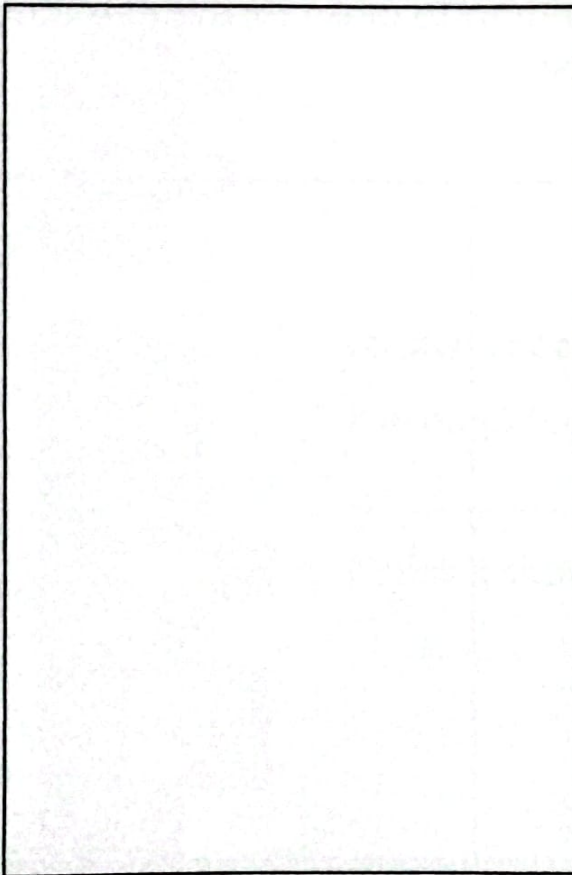
Stand	
Click fingers	
Click fingers	
Click fingers	
Click fingers	
Clap	
Sit down	

4.

What blocks are needed to create these shapes? Draw blocks to make a Scratch program.

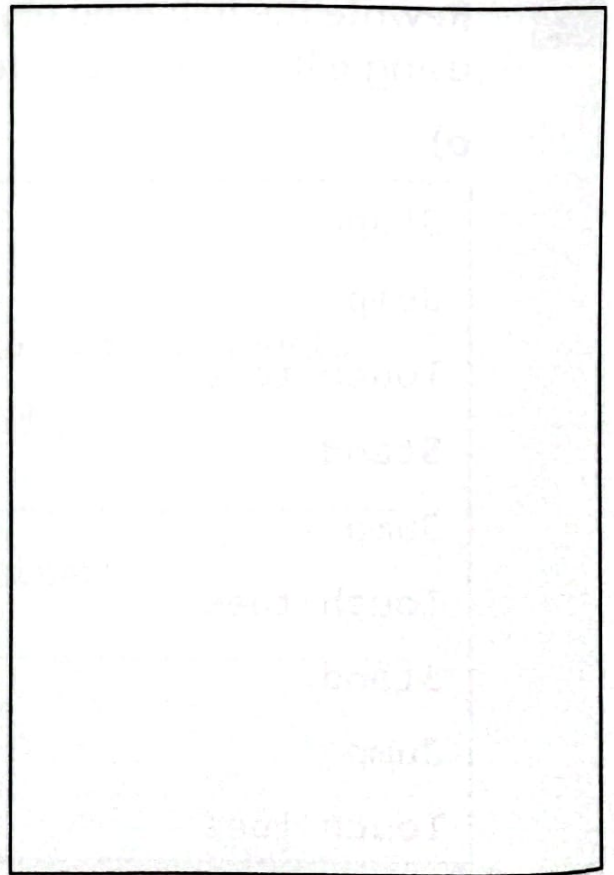
a) Shape: Triangle

Length of sides: 75



b) Shape: Square

Length of sides: 125



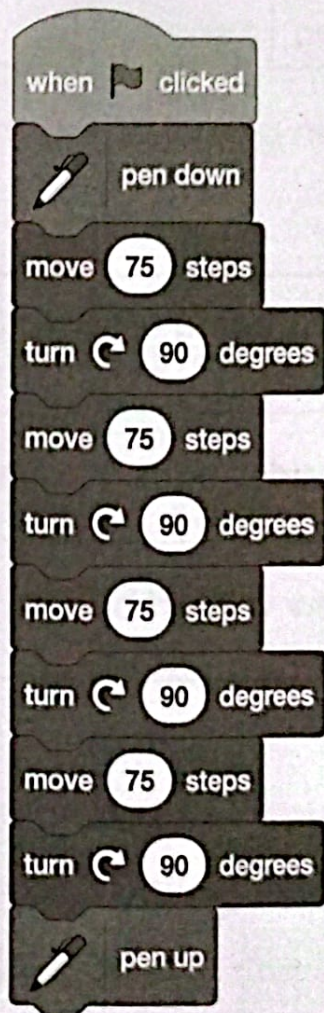
Lesson 7



Identifying repetition in Scratch

1. How many degrees make up a full turn? _____
2. Each of the following programs contains repeated code. For each one, answer the questions and sketch a new version using a counted loop to make the program more efficient.

a)

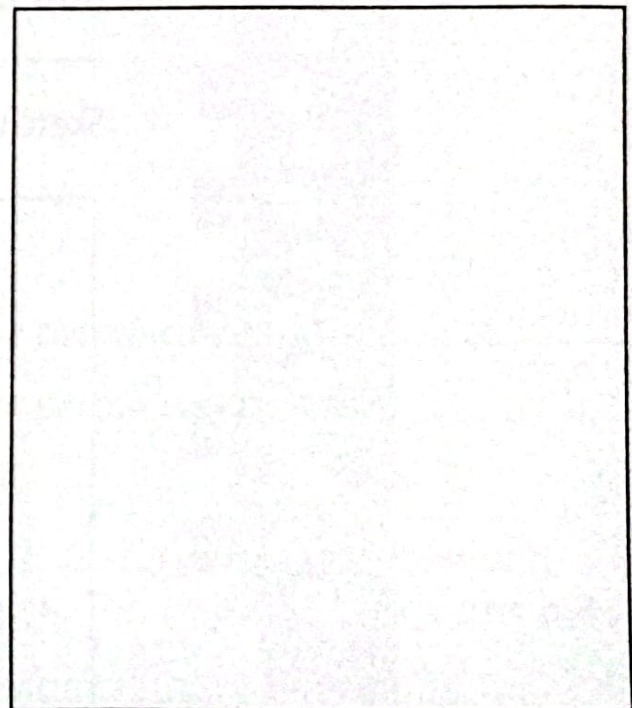


Which part is being repeated?

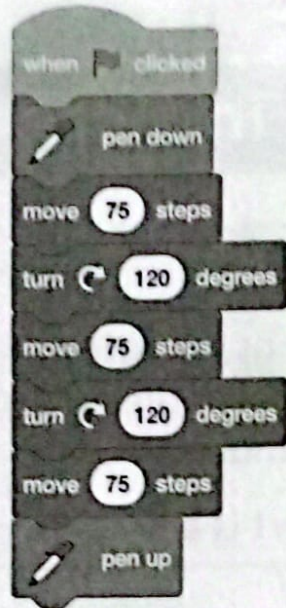


How many sides does the shape have?

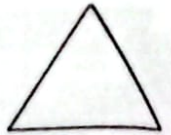
Sketch a new version below:



b)

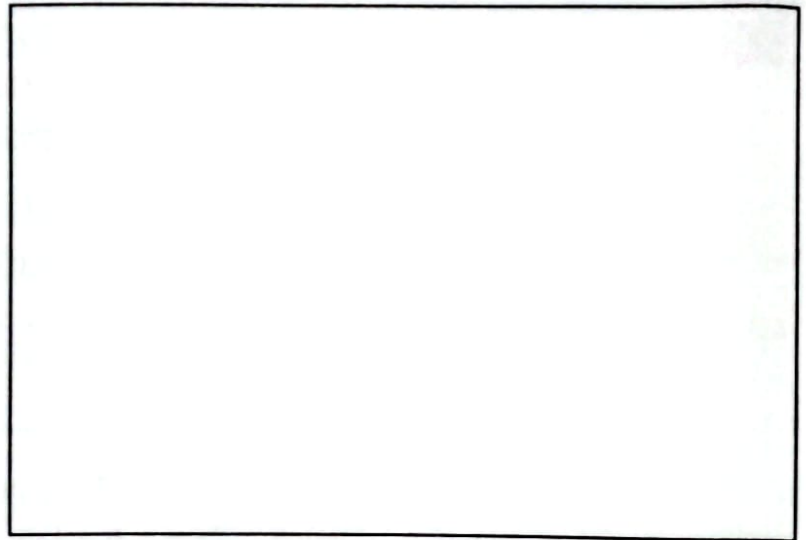


Which part is being repeated?

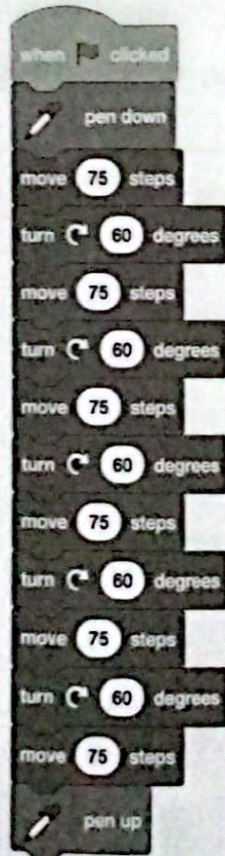


How many sides does it have?

Sketch a new version below:



c)

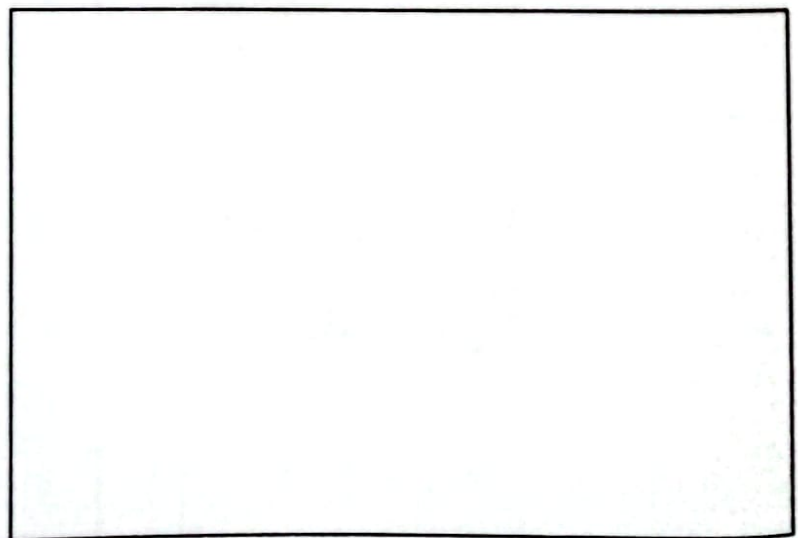


Which part is being repeated?



How many sides does it have?

Sketch a new version below:





Lesson 8

Recognising nested loops within an algorithm

1. Match the key words to the definitions.

loop

a loop within another loop

nested
loop

a sequence that starts again from the
beginning once it finishes

2. Look at the following nested loop.

Loop 8 times

Stand

Loop 3 times

Clap

Sit down

Wave

Stand

Sit down

a) How many times would the person clap? _____

b) How many times would the person wave? _____

3. Complete the sentence below.

A program should use _____ instead of writing instructions over and over again. This helps because it cuts out some unnecessary steps.

4. Remove the loops from the algorithm below and rewrite it as a simple sequence.

Loop 2 times

Stand

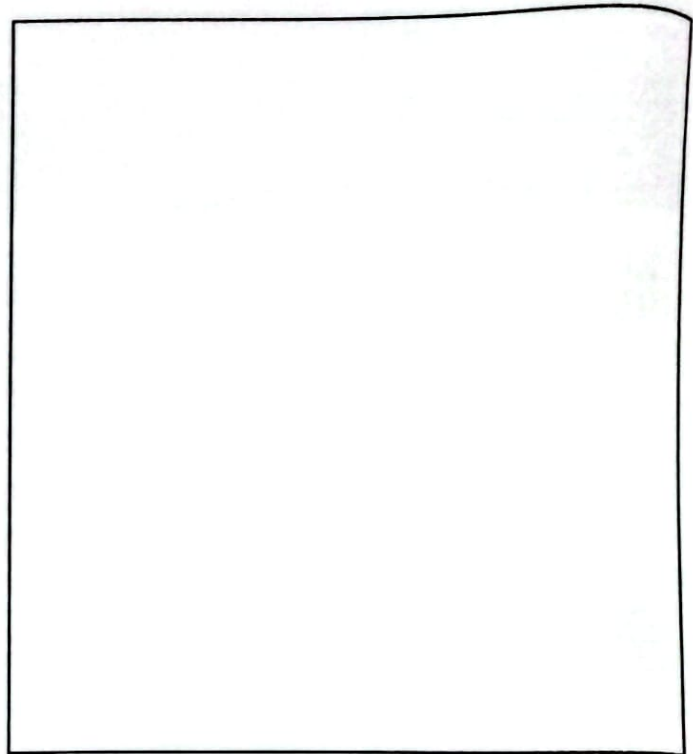
Jump

Crouch

Loop 3 times

Click fingers

Sit down



5. Rewrite the algorithm below into a nested loop.

Crouch

Reach up high

Arms to the side

Clap

Clap

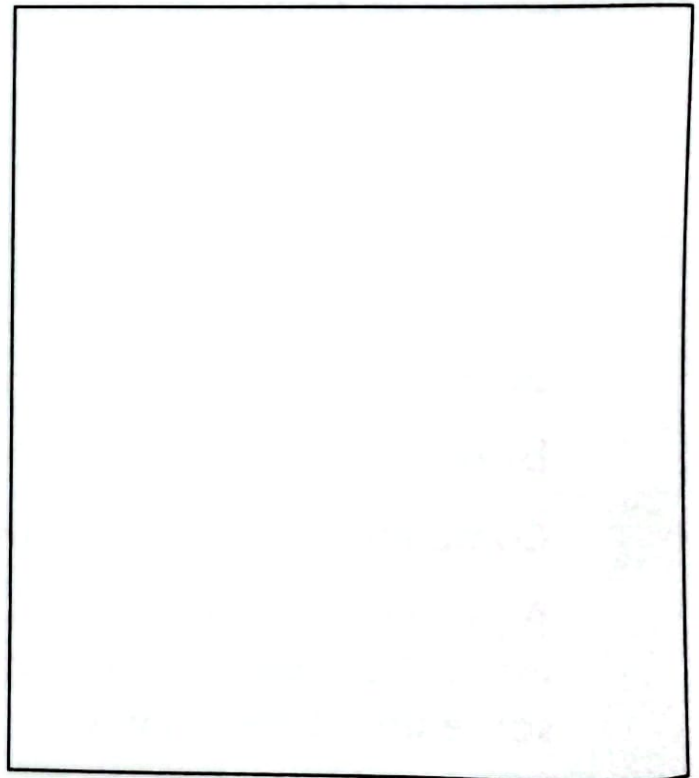
Crouch

Reach up high

Arms to the side

Clap

Clap



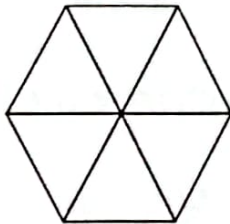
Lesson 9



Using nested loops to write more complex algorithms

I. Match the patterns to the descriptions.

a)

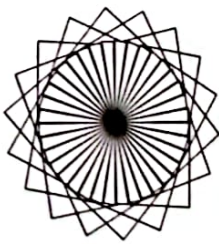


Built from squares

90 degree turn after each shape

Loops 4 times

b)

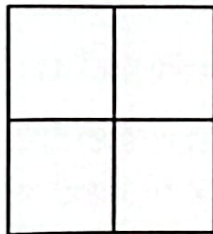


Built from triangles

60 degree turn after each shape

Loops 6 times

c)



Built from squares

20 degree turn after each shape

Loops 18 times

2. How many sides will these four polygons have if they use this angle of clockwise turn?

Clockwise turn	Number of sides
45 degrees	
60 degrees	
90 degrees	
120 degrees	

3. Write the two options that can be used to change the look of lines created using the Scratch pen tool.

1 _____
2 _____

4. What is 'overdrawing' in Scratch?

Lesson 10



Creating your own flower patterns

1. Describe each of the following terms in one sentence.

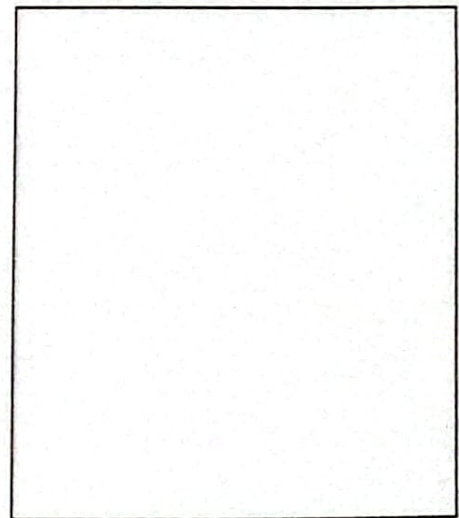
a) algorithm: _____

b) loop: _____

c) nested loop: _____

2. Think about the design you made in Lesson 10 of the Student Book. Give an example of how you did one of the following:

- created a polygon
- used more than one angle
- used the pen up and down tool
- used a loop
- used a nested loop
- avoided overdrawing
- debugged my program



3. Which activity or activities have you enjoyed most during this unit? Look back in your Workbook to remind yourself. Explain why.

Unit 4

End-of-unit assessment

1 What does the key word 'action' mean when programming?

A information which is sent out

☐

B information which is received

☐

(1 mark)

2 Number the steps of this algorithm to put them in the correct sequence. The first one has been completed for you.

Rinse hands

☐

Wet hands

☒

Dry hands

☐

Rub hands together

☐

Add soap to hands

☐

(1 mark)

3 Look at the following algorithm. Which step is the repetition/loop?

Step 1: Put a slice of toast onto a plate

Step 2: Pick up a knife

Step 3: Spread butter on toast

Step 4: Cut toast in half

Step 5: Put knife down

Step 6: Pick up toast and eat

Step 7: Repeat step 6 until all toast is gone

Step 8: Rinse plate and knife

A step 1

☐

B step 4

☐

C step 5

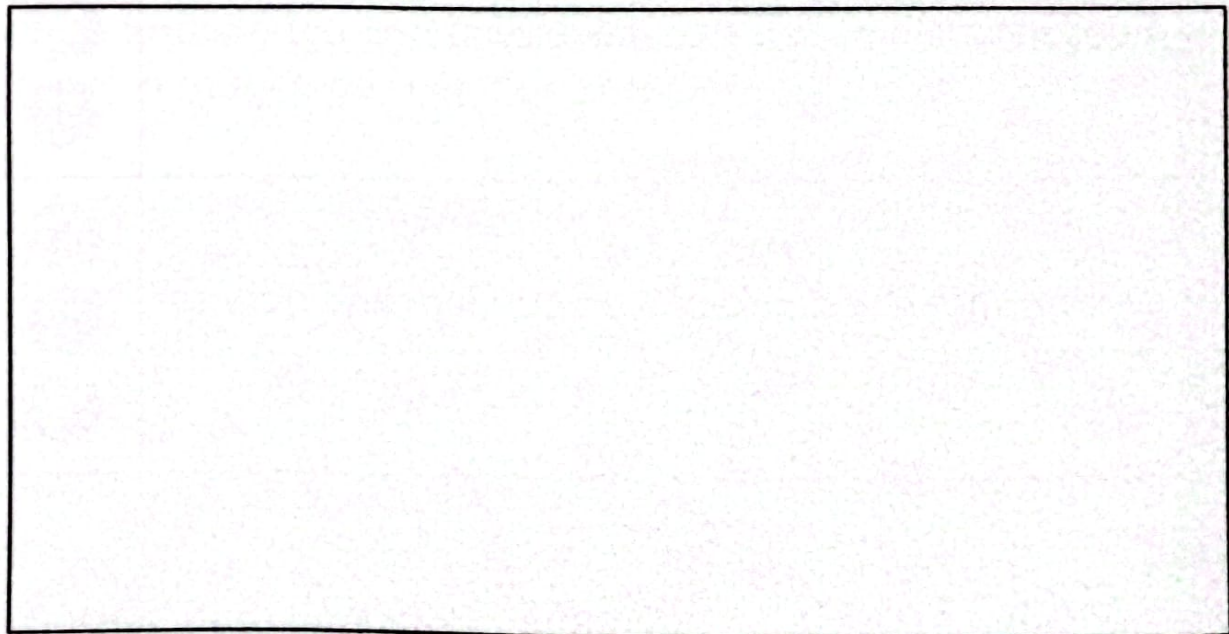
☐

D step 6

☐

(1 mark)

- 4 Abu wants to draw a 50 step x 50 step square. Write an algorithm that he can use.



(4 marks)

Unit 4 Checkpoints

I can create and debug programs.	  	<input data-bbox="1356 280 1428 347" type="checkbox"/> <input data-bbox="1356 369 1428 436" type="checkbox"/> <input data-bbox="1356 459 1428 526" type="checkbox"/>
I can predict what an algorithm will do.	  	<input data-bbox="1356 571 1428 638" type="checkbox"/> <input data-bbox="1356 660 1428 728" type="checkbox"/> <input data-bbox="1356 750 1428 817" type="checkbox"/>
I can create algorithms with repetition.	  	<input data-bbox="1356 862 1428 929" type="checkbox"/> <input data-bbox="1356 952 1428 1019" type="checkbox"/> <input data-bbox="1356 1041 1428 1108" type="checkbox"/>
I understand how to use counted loops.	  	<input data-bbox="1356 1153 1428 1220" type="checkbox"/> <input data-bbox="1356 1243 1428 1310" type="checkbox"/> <input data-bbox="1356 1332 1428 1400" type="checkbox"/>
I know what a nested loop is and understand how to use them.	  	<input data-bbox="1356 1444 1428 1512" type="checkbox"/> <input data-bbox="1356 1534 1428 1601" type="checkbox"/> <input data-bbox="1356 1624 1428 1691" type="checkbox"/>

Unit 5

Graphics manipulation and copyright

In this unit you will learn how digital images work and how to manipulate them using image editing software. You will be taught about pixels and the different file formats you can use for graphic files.

You will also learn about copyright and ownership of created content, as well as how to search effectively for images that can be reused under a Creative Commons licence.

Using the knowledge and skills gained throughout the unit, you will create a magazine cover for a topic of your choice.

Lesson 1



Understanding digital images

1. Complete the sentences using the word bank below. Use each word only once.

Word bank

binary bitmaps image pixels

Images are made up of tiny dots called _____.

Each _____ is represented by a sequence of
1s and 0s, which is called _____

Images which are made from a grid of pixels are called
_____.

2. Colour in the grid using the key below.

Key: 0 = white 1 = black

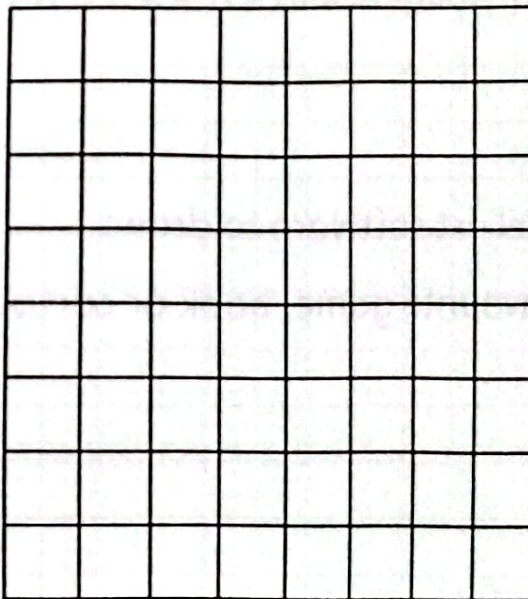
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0	0	1	0	0	0
0	0	0	0	1	0	0	0	1	0	0	0	0
0	0	0	1	1	1	1	1	1	1	0	0	0
0	0	1	1	0	1	1	1	0	1	1	0	0
0	1	1	1	1	1	1	1	1	1	1	1	0
0	1	0	1	1	1	1	1	1	1	0	1	0
0	1	0	1	0	0	0	0	0	1	0	1	0
0	0	0	0	1	1	0	1	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0

3. Finish the sentence:

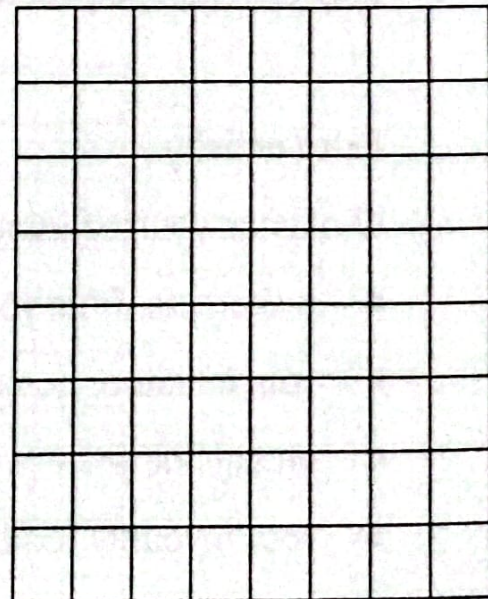
Pixels are small d_____ that make up digital
i_____.

4. Look at the example below, then create your own pixel artwork and write the binary code for it.

0	0	0	0	1	0	0	0
0	0	0	1	0	1	0	0
0	0	1	0	0	0	1	0
0	1	0	0	0	0	0	1
0	1	0	1	0	1	0	1
0	1	0	0	0	0	0	1
0	1	0	0	1	0	0	1
0	1	0	0	1	0	0	1



Create your artwork here.
Colour in the boxes to make
your design come alive.



Now write the binary
code here.

Lesson 2



Creating pixel artwork

- I. Use pixel art software to turn your images from Lesson 1, Activity 4 into bitmaps.

Follow the instructions to make your bitmaps:

Step 1: Open pixel art software and click on 

Step 2: Use the pick colour tool  and choose a colour for your pixels.

Step 2: Click on the pen tool  and then choose your pixel size 

Step 4: Click your left mouse to create pixels.

Step 5: Complete your bitmap image.

Extra activity

Challenge yourself using pixel art software to draw:

- a character from your favourite game, book or cartoon
- your initials or name
- an animal
- your favourite food.

Lesson 3



Graphic file formats

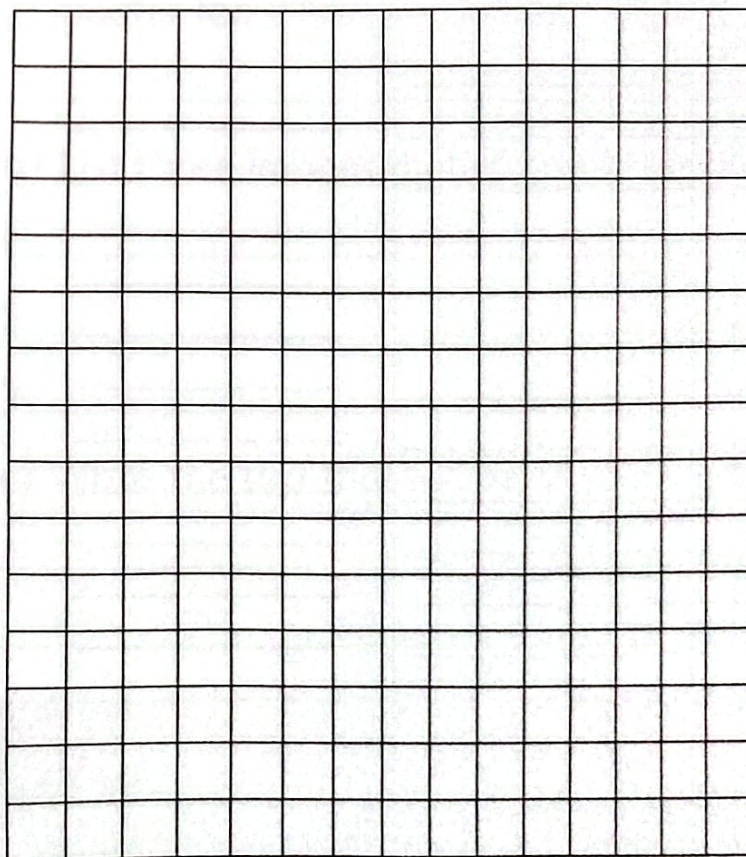
I. Read the information below and colour in the grid.

- a) The first number in each sequence tells you the number of white squares or pixels that there will be (from the left of the grid).
- b) The next number in each sequence means the number of black pixels to be coloured in.
- c) If the first number is a 0, then the first pixel is black.

For example:

1, 2, 1, 2 = (1 x White), (2 x Black), (1 x White), (2 x Black)

0, 1, 1, 1, 2 = (1 x Black), (1 x White), (1 x Black), (2 x White)



15
7, 1, 7
2, 3, 2, 1, 2, 3, 2
2, 4, 1, 1, 1, 4, 2
2, 11, 2
3, 9, 3
5, 5, 5
6, 3, 6
5, 5, 5
3, 9, 3
2, 11, 2
2, 4, 1, 1, 1, 4, 2
2, 3, 2, 1, 2, 3, 2
7, 1, 7
15

2.

JPEG

A blogger wants to create an animation for their website.

GIF

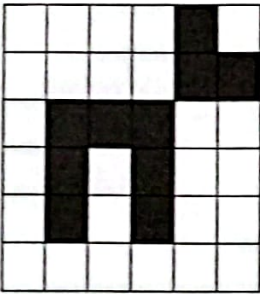
A website needs an image for their social media profile.

TIFF

A publisher wants a picture for their latest magazine cover.

3.

Image



Compression

4.1.1

4.2

1, 3, 2

1, 1, 1, 1, 2

1, 1, 1, 1, 2

6

A full-page sheet of white graph paper with a black grid. The grid consists of 20 columns and 20 rows of squares. There are no margins or other markings on the page.[illegible]

Lesson 4



Formatting an image

1. Match the boxes to complete the sentences.

Lossless
compression

reduces a file's size by removing
some of the data. It also reduces
the quality of the image.

Lossy
compression

reduces a file's size by keeping
the data, but stores it differently
to make it smaller. This takes up
less space and is faster to read.

2. Plan an e-greetings card or poster.

a) Write the event that you are creating the e-greetings card or poster for.

b) List three images that you could use on it.

1 _____

2 _____

3 _____

c) Write the text that will be on your e-greetings card or poster.

Tip

- Keep your text short and simple!

3

Create your e-greetings card or poster using image editing software.

Step 1: Search for images using a search engine. Save the images.

balloons



Step 2: Open the image editing software and create a new template or file.

OPEN IMAGE

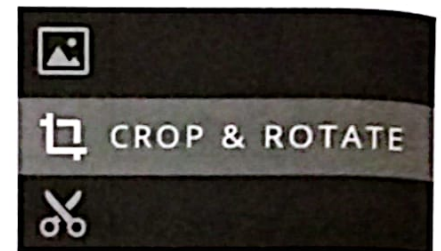
Create new or Load url

Step 3: Insert your images

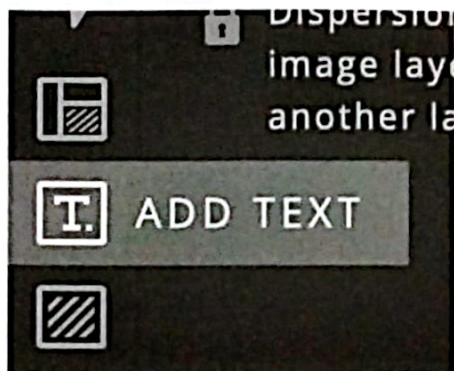


and position them on the page layout.

Step 4: Use the crop and resize tools for your images, so that they fit the layout of the page.



Step 5: Add text and choose a font for it.



Step 6: Add any other text or images to finish your work.

Step 7: Give and receive feedback to your partner.

- Say one thing that you really like about your partner's e-greetings card or poster.
- Say one thing that could be improved or changed on their e-greetings card or poster.

Lesson 5

What is copyright?

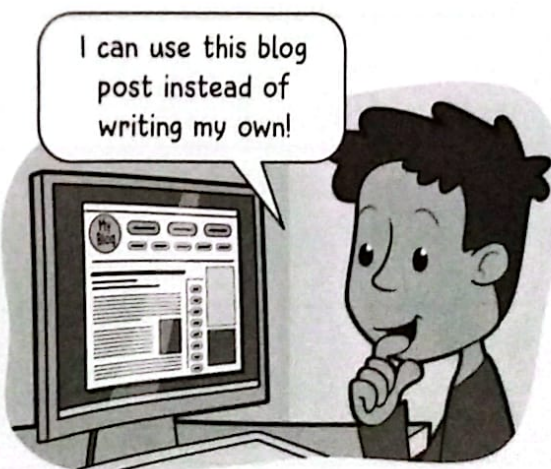


1. What does copyright mean?

2. Create a poster about copyright. On your poster, explain the importance of respecting people's work taken from the internet.

Think about:

- how you would feel if you saw somebody else's name on your work
- how you would feel if you saw your work being used by someone else without your permission
- what you could do to tell others that they have your permission to use your work
- how you could find out if an image is free to use.

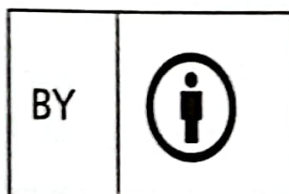


Extra activity

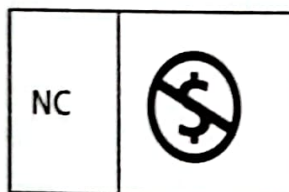
Match the kinds of Creative Commons licence and symbols to the correct descriptions.

Tip

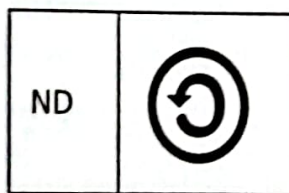
- Look carefully at the symbol to help you decide.



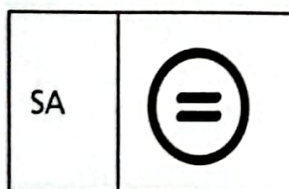
It can be changed and shared but you must keep the original licence.



It can be copied, shared and displayed but you can't make changes to it.



It can be copied, changed, shared and displayed but you must give credit to the owner.



It can be copied, changed, shared and displayed but you can't make money from it.



Lesson 6

Searching effectively for images

1. Finish the sentence:

A colour splash image is _____

2. Search for three colour splash images online and complete the table below.

Tip

- Find images that have a free-to-use or Creative Commons licence. Use the Student Book to help you with how to do this.

Description	URL (web page address)	Creative Commons licence type*

*Make sure that you attribute the image correctly.

Extra activity

Write a guide on how to check the usage rights of an image online.

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

Step 5: _____

Step 6: _____

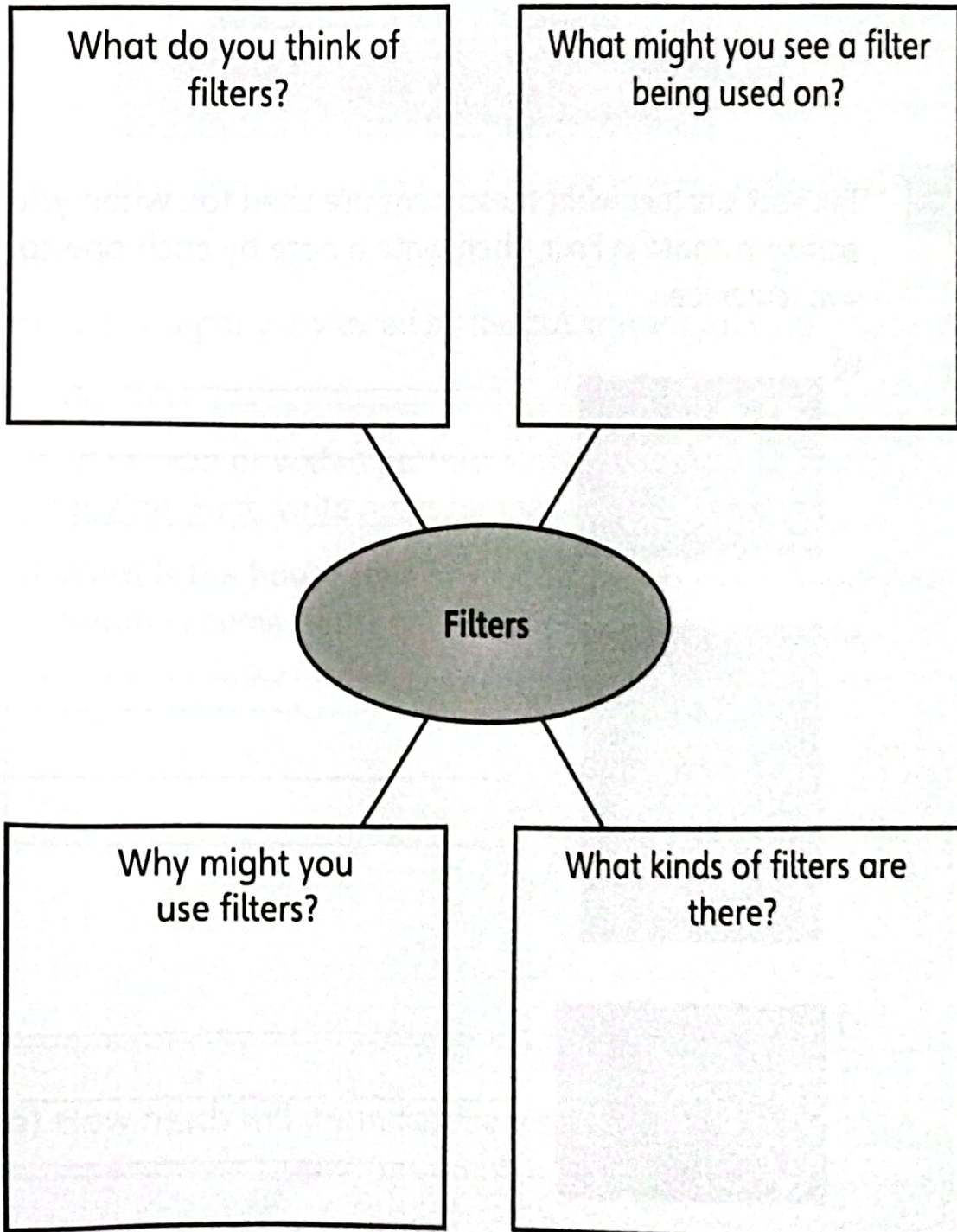
Lesson 7



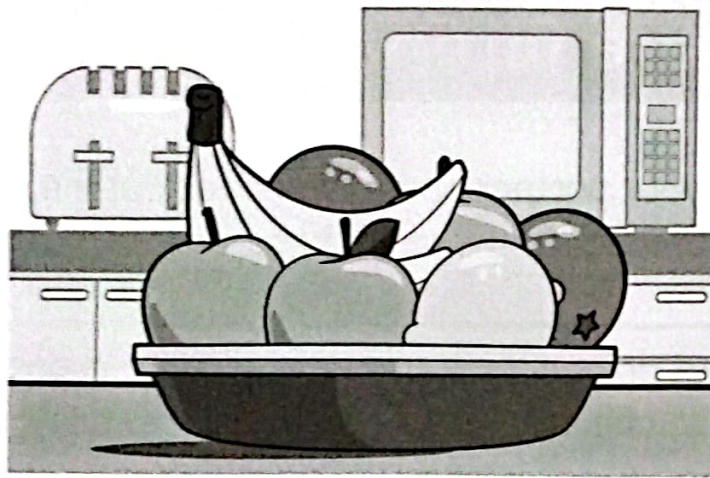
What are filters?

I.

Talk to your partner about filters. Look at the questions and add your ideas to the mind map.



2. With your partner, look at this image. Circle any objects that could be used for a colour splash.

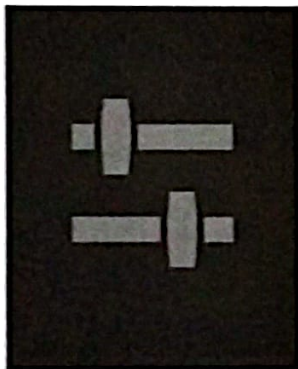


3. Tell your partner what these icons are used for, when you are editing a photo in Pixlr. Then write a note by each one to help you remember.

a)



b)



c)



1. Complete the sentences below. Use the words in the word bank to help you.

corporate image

house style

How a company is viewed by the public is known as its _____.

a) What is the house style of your magazine? (think about your colour scheme, fonts and sizes)

1947

Sketch out a design for the layout of your magazine cover.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some faint smudges and discoloration, characteristic of old paper. The page is framed by a dark border, possibly the book's cover or binding. There is no text or other markings on the page.

Example

4.

Work with a partner. Search for possible images to use on your magazine cover and complete the table below.

Tip

- Only use images that have a free-to-use or Creative Commons licence.
- Find Unit 5, Lesson 6 in the Student Book for a reminder on how to do this.

Description	URL (web page address)	Creative Commons licence type*

*Make sure that you attribute the image correctly.

Extra activity

Research examples of magazine covers, using a search engine to help you.

Think about:

- how you know that the images that you find are free to use
- why you cannot use all images that you find on the internet
- why you choose your images
- how the images fit in with the house style of the magazine cover that you created last lesson.

Collect notes about your research here.

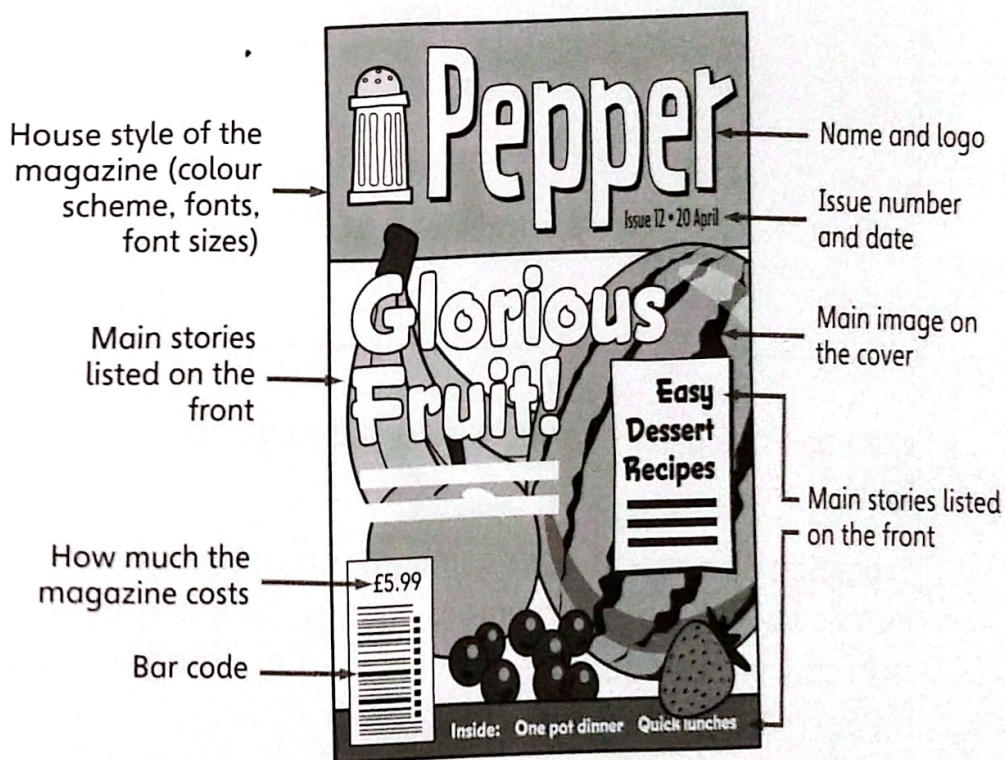


Lesson 10



Creating your magazine cover

- I. Create your magazine cover using the photo editing software. Using all the knowledge learned throughout this unit, make sure that you include:

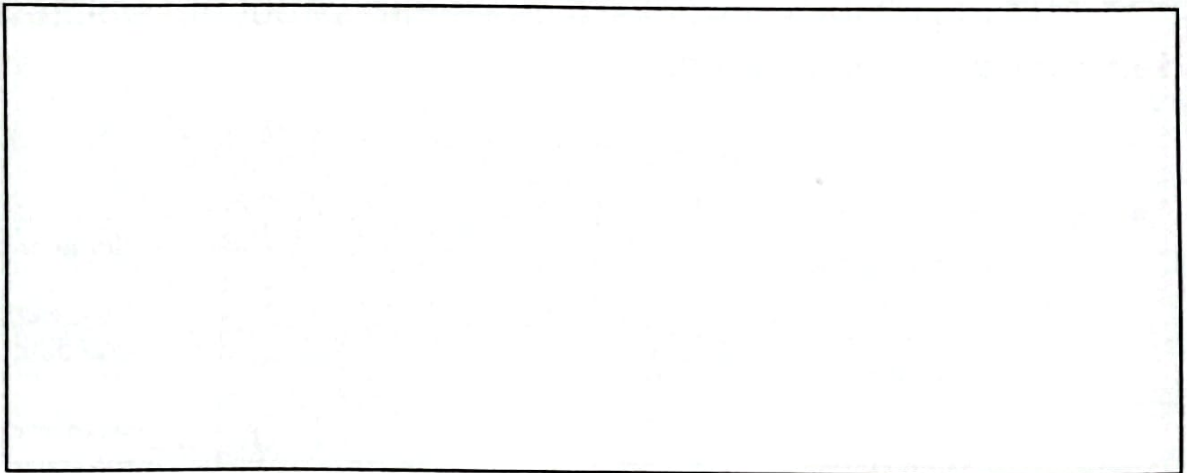


2. Think about what you have learned in this unit about graphics and copyright.

a) What have you learned in this unit?

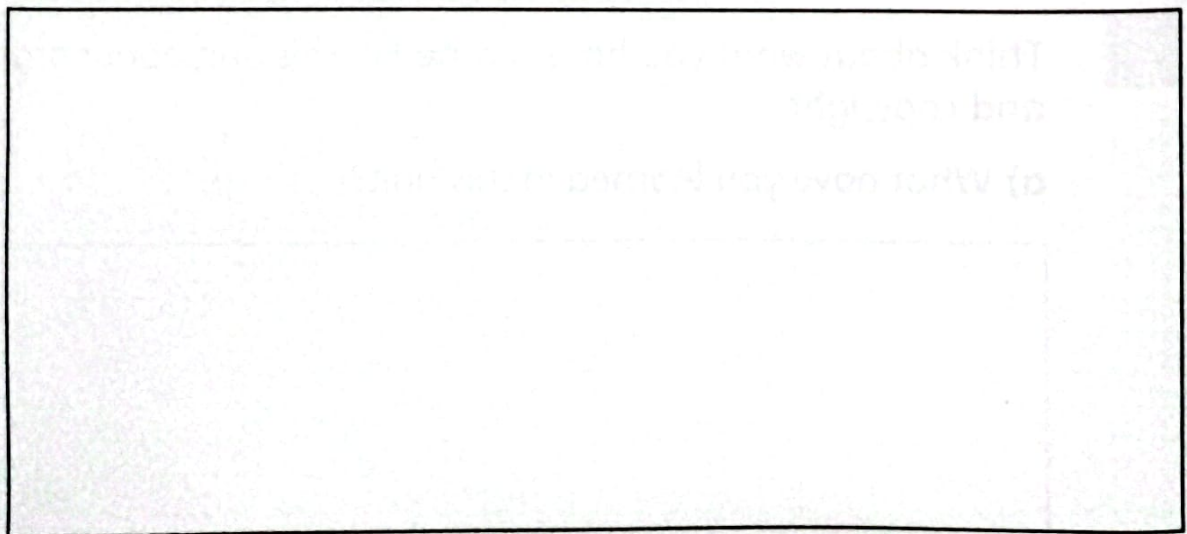
b) Which lesson did you enjoy or feel that you were most confident in? Explain why.

Think about your learning on: binary representation of images, pixel art, designing an e-greetings card, copyright, and Creative Commons licences, colour splash images and designing a magazine cover.



c) What is one thing that you would like to get better at? Explain why.

Examples: be better at editing images, be better at searching for free-to-use/Creative Commons images, be more mindful/respectful of other people's work when using images used from the internet.



Unit 5

End-of-unit assessment

1 What name is given to the coloured dots that make up a digital image?

A pixies

☐

B resolution

☐

C captions

☐

D dots

☐

E pixels

☐

F highlights

☐

(1 mark)

2 Read the statements about the copyright of images and text. Complete the table below.

Statement	True	False
Before using an image from the internet, you must check what you are allowed to do with it.		
All images with a Creative Commons licence can be used however you want.		
Anything shared on social media can be copied.		

(3 marks)

- 3 Layla is working on a project and finds a great picture to use. What does Layla need to check before she adds it to her work?

A how good the resolution is
B the copyright status
C if the picture will fit on the page
D which website it is on

(1 mark)

- 4 Complete the following sentences by choosing the most suitable application to use for each one.

desktop publishing application publishing application
spreadsheet web browser word processing application

- a) If you are creating a project that will have a mixture of images, text and tables, the best application to use is a _____.
- b) For a project that has lots of text, the best application to use is a _____.
- c) If you are making a poster that will have mostly images and a little bit of writing, the best application to use is a _____.

(3 marks)

- 5 Explain the difference(s) between lossless and lossy compression.

(2 marks)

Unit 5 Checkpoints

I know that digital images are made up of pixels.	 <input data-bbox="1276 280 1340 347" type="checkbox"/>  <input data-bbox="1276 369 1340 436" type="checkbox"/>  <input data-bbox="1276 459 1340 526" type="checkbox"/>
I can create pixel artwork using binary code.	 <input data-bbox="1276 571 1340 638" type="checkbox"/>  <input data-bbox="1276 660 1340 728" type="checkbox"/>  <input data-bbox="1276 750 1340 817" type="checkbox"/>
I know how text and images can be used together.	 <input data-bbox="1276 862 1340 929" type="checkbox"/>  <input data-bbox="1276 952 1340 1019" type="checkbox"/>  <input data-bbox="1276 1041 1340 1108" type="checkbox"/>
I understand how copyright affects the use of online digital content.	 <input data-bbox="1276 1153 1340 1220" type="checkbox"/>  <input data-bbox="1276 1243 1340 1310" type="checkbox"/>  <input data-bbox="1276 1332 1340 1400" type="checkbox"/>
I can search for images and understand what the Creative Commons licence is.	 <input data-bbox="1276 1444 1340 1512" type="checkbox"/>  <input data-bbox="1276 1534 1340 1601" type="checkbox"/>  <input data-bbox="1276 1624 1340 1691" type="checkbox"/>

Unit 6

Programming (part 2)

In this unit you will learn about three kinds of conditional selection. You will create your own examples of these, then learn how two kinds of conditional selection can be changed by adding a forever loop.

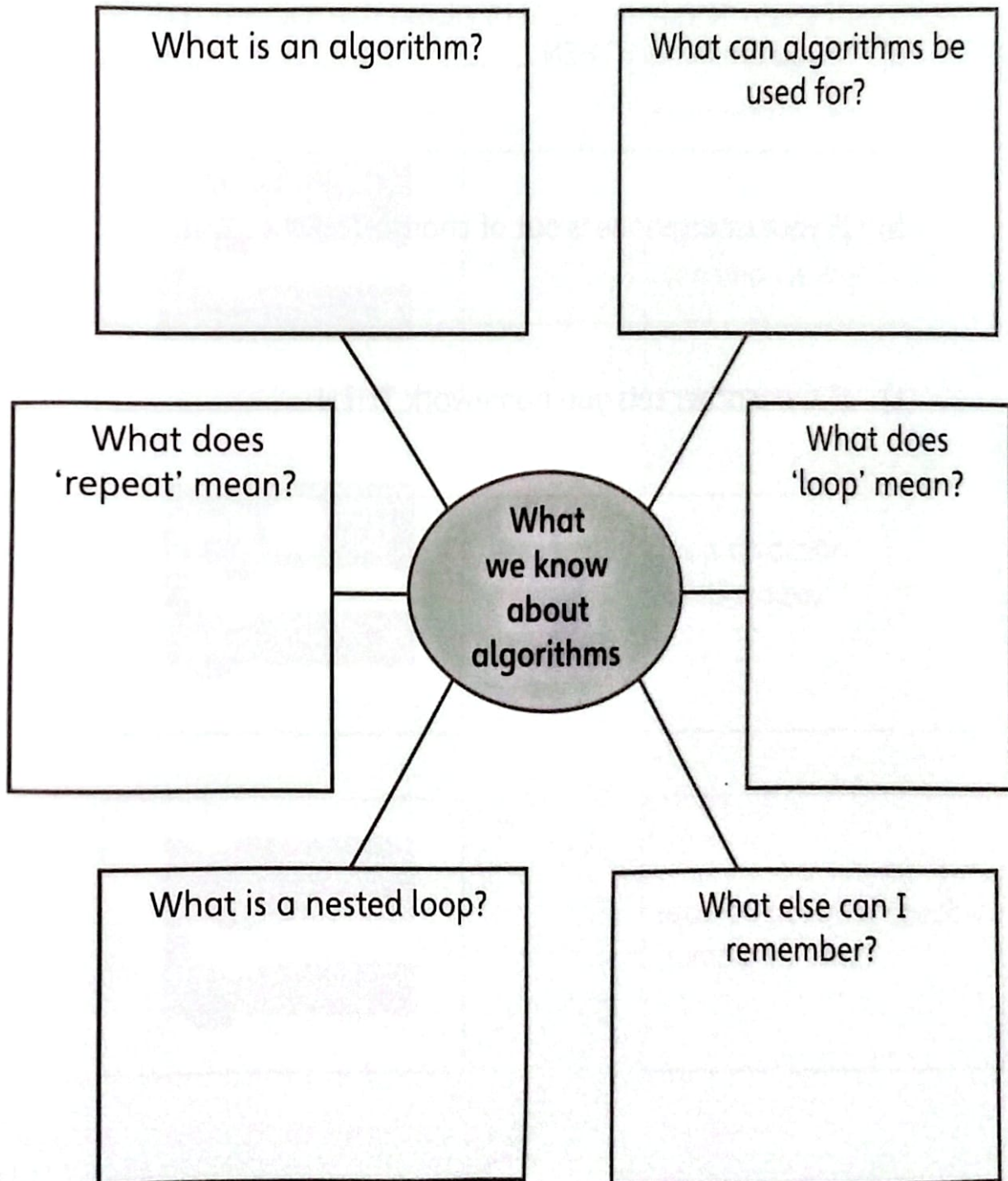
You will also write your own games and act them out. Finally, you will design and create a maze game in Scratch using what you have learned.



Lesson 1

Understanding conditional actions

- I. Talk to a partner about what you know about algorithms. Use what you have talked about to fill the mind map below.



2. Circle the two conditional action key words in this statement:

If a whistle is blown then the game begins.

3. Complete with your own words the following examples of real-life conditional actions:

a) IF you are hungry THEN _____

b) IF your smartphone is out of charge THEN _____

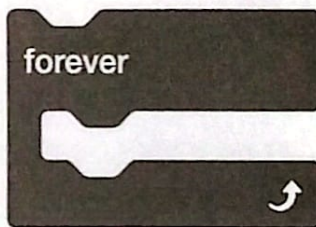
c) IF the teacher sets you homework THEN _____

Lesson 2

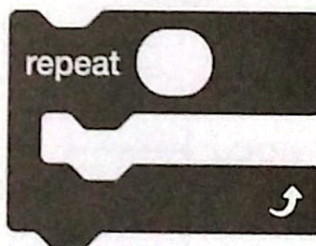


Using conditional actions in Scratch

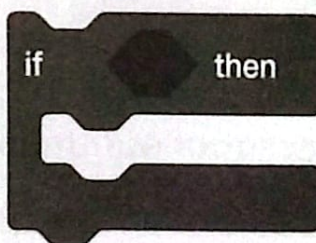
1. Think about what conditional actions are. Give some examples to a partner or friend.
2. Match the Scratch blocks to the examples of where they might be used.



carry out an action if a condition is met



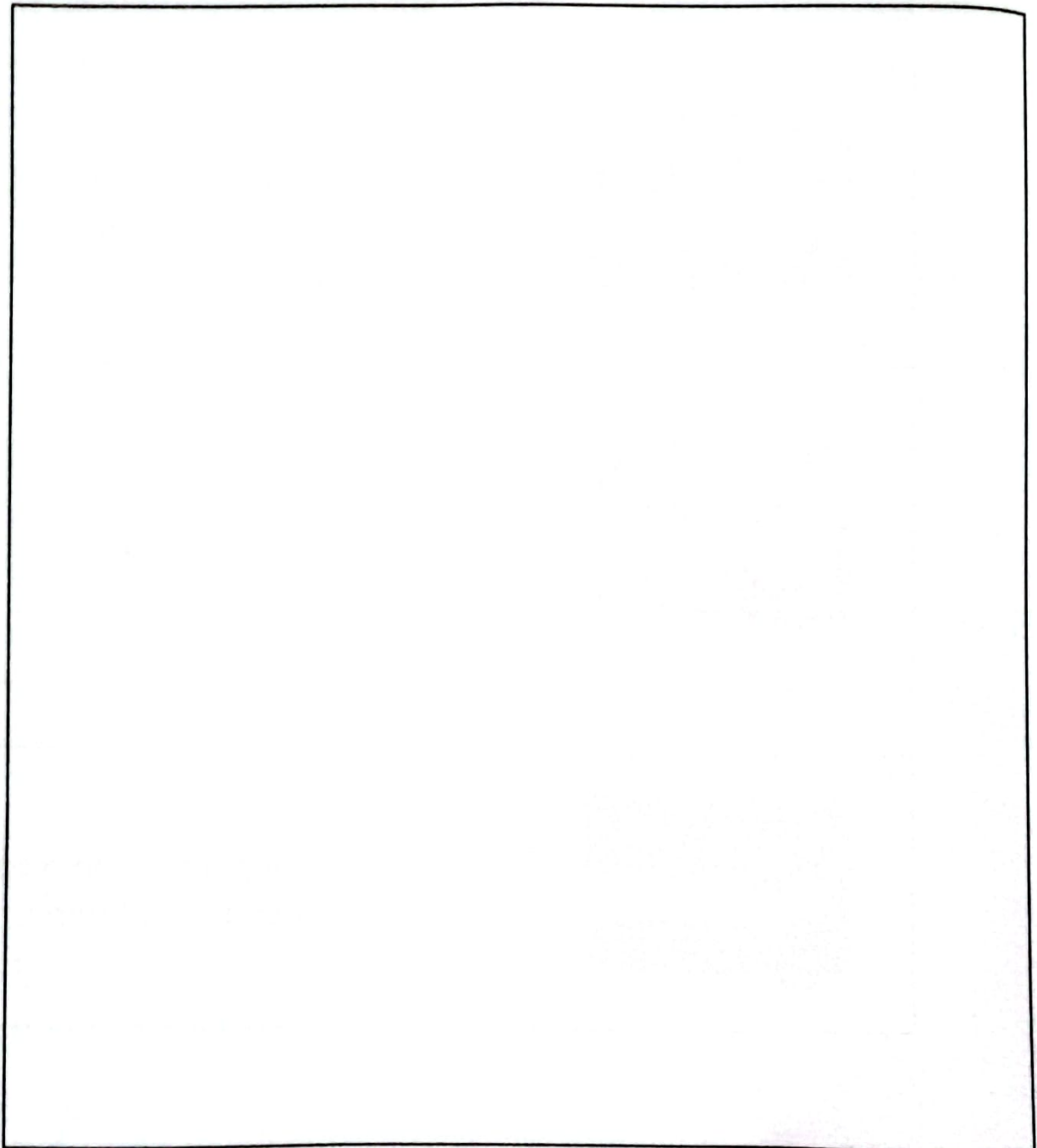
loop an action continuously



loop an action a specific number of times

3. Sketch out a Scratch program that meets the following brief for any sprite.

- The program should run continuously.
- If the letter 's' is pressed, the size of the sprite should increase by 100.
- There should be a five second wait, then the size should decrease by 100. (Tip: use a negative value.)

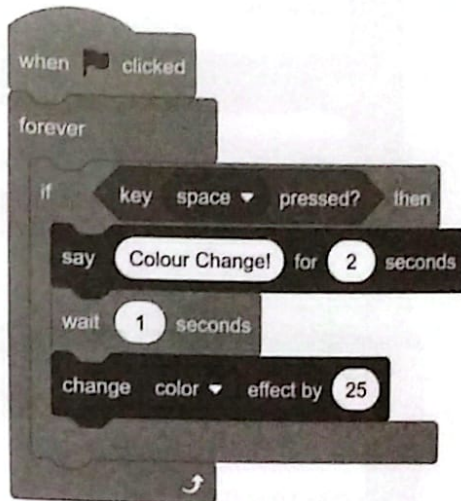


Lesson 3

Switching between actions



1. Discuss the questions below with a partner or friend.

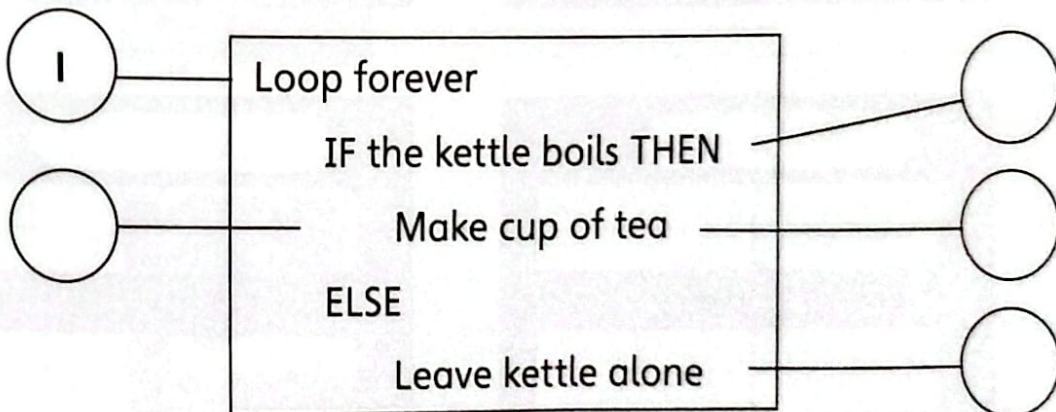


What will the program do?

Which part is the condition?

Which part is the action?

2. Number the parts of the algorithm that match the descriptions below. The first one has been done for you.



- 1 continue looping algorithm until condition is met
- 2 the action to take if the condition is not met
- 3 the action to take if the condition is met
- 4 description of condition
- 5 use of indentation

3. Create four algorithms of your own, using the boxes provided. Two should be action-based tasks that you can try out with a partner. Two should be real-life examples, such as a traffic crossing or something in your home.

For example: IF partner shouts 'stop now' THEN take a bow
ELSE sing.

if	Partner shouts 'stop now'	then
	take a bow	
else		
	sing	

if		then
else		

if		then
else		

if		then
else		

if		then
else		

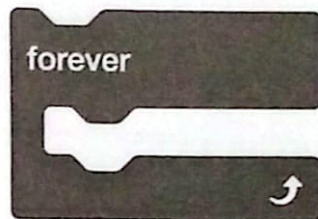
Lesson 4



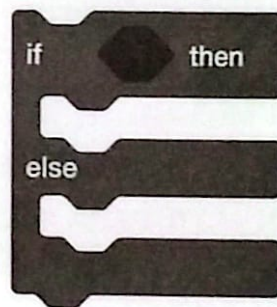
Using conditional switches in Scratch

I. Explain what these Scratch blocks do in an algorithm.

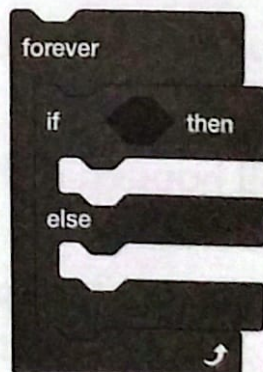
a)



b)



c)



2.

- a) Create a program of your own choice, similar to the one in Unit 6 Lesson 4 of the Student Book. Tick each step as you complete it and write down your choice of block.

Choice of block

- ☐ **Step 1:** Choose a starting Event block. _____
- ☐ **Step 2:** Choose a continuous loop block. _____
- ☐ **Step 3:** Create a nest loop. _____
- ☐ **Step 4:** Decide on a condition. _____
- ☐ **Step 5:** Decide on an action. _____
- ☐ **Step 6:** Decide on the conditional switch. _____

- b) Describe what happens when you run your program.
- _____
- _____
- _____

Extra activity



Look at the program on the left.

Talk to your partner about the following:

- what will happen if the condition is met
- what will happen if the condition is not met

Lesson 5



Conditions that stop a repeated action

1. Look at the conditional switch below and answer the questions.

IF

your partner touches
your shoulder

THEN

stand up

ELSE

wave

What is the condition?

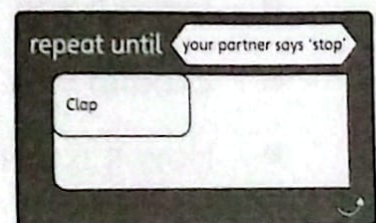
What are the actions?

What blocks could you use to make the program repeat?

2. a) Create four examples of algorithms that use conditional loop statements to stop a repeated action.

For example:

Repeat until partner says 'stop'
Clap



repeat until 	repeat until 
repeat until 	repeat until 

b) Act out the algorithms that you have created.

Partner 1: Act out the repeated action continually.

Partner 2: Give the conditional loop command.

Extra activity

Write a step-by-step guide for a friend on how to create algorithms with a conditional loop.

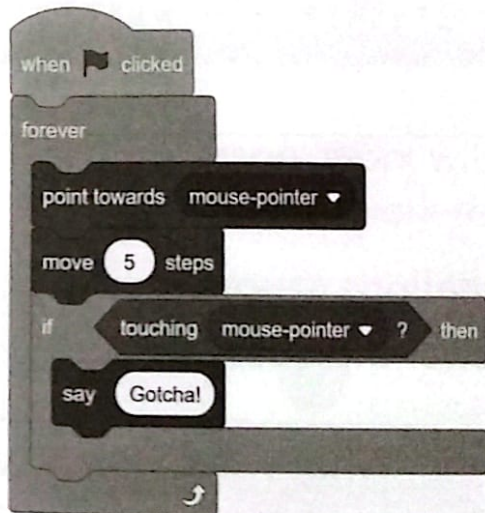
- Explain why a conditional loop might be useful to them.
- Explain why it could be more useful than a forever loop.
- How it is different to an 'ELSE' block?

Lesson 6



Creating a simple game in Scratch

1. Write what you predict will happen when this code is run.



2. a) Create a game with a conditional loop using Scratch, similar to the one in Unit 6 Lesson 6 of the Student Book. Tick each step as you complete it and write down your choice of block.

Choice of block

☐ **Step 1:** Choose a starting Event block.

☐ **Step 2:** Choose a Control block.

☐ **Step 3:** Decide on a condition.

☐ **Step 4:** Decide on the action the sprite will perform.

☐ **Step 5:** Decide what your sprite will say.

☐ **Step 6:** Add a sound when the conditional loop action is met.

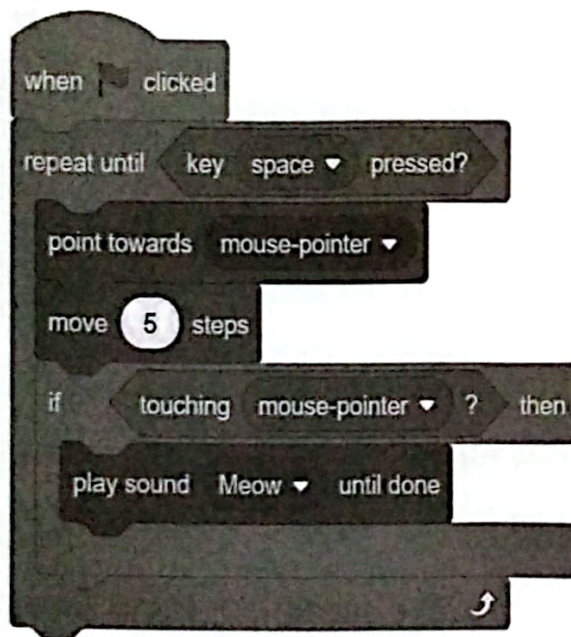
☐ **Step 7:** Add a time condition.

b) Describe what happens when you run your game.

c) Debug your game as you create it. List any problems you find.

Extra activity

Look at this Scratch program. Answer the questions.



What will happen when this program is started?

How will the program be stopped?

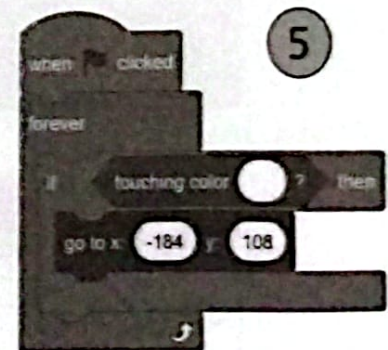
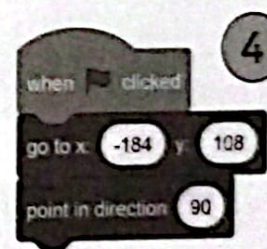
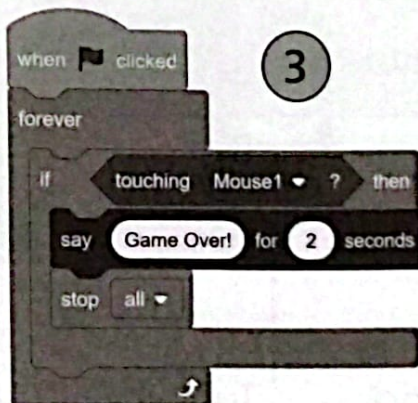
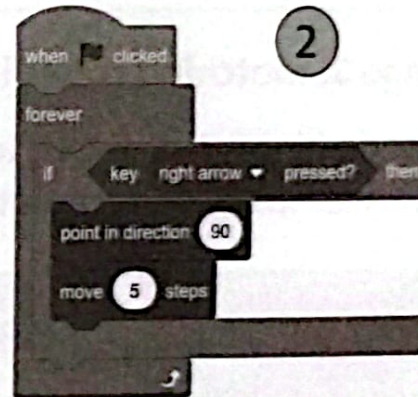
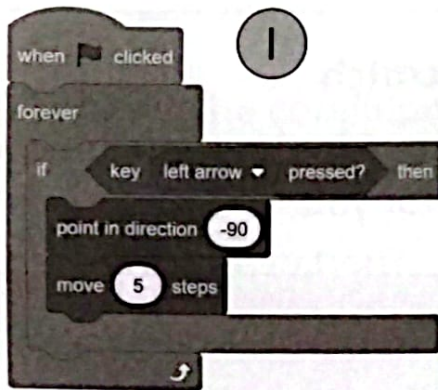
Lesson 7



Identifying conditional actions, conditional switches and conditional loops in algorithms

For this lesson, work with a partner. Look at these five code blocks and then work through the challenges.

Cat and mouse challenge



Challenge 1: understanding code in Scratch

1.

a) What will code block 5 do if the cat touches the colour white?

b) In code block 3, what is the first thing that will happen if the cat touches the Mouse 1 sprite?

c) What loop are all the 'IF... THEN...' blocks inside?

d) Which code block does not have a condition?

e) What happens if you press the left arrow key?

Challenge 2: matching codes in Scratch

2.

Match code blocks 1–5 above to A to F in the table below. The first one has been completed for you.

Tip

- Think about what will happen when you click 'Run'.
- One of the code blocks does not match.

A	B	C	D	E	F
Stop the program if the cat touches the Mouse 1 sprite.	Turn left if left key pressed.	Go back to the start if the cat touches the colour white.	Go to start position and point right.	Turn right if right key pressed.	Turn left if right key pressed.
3					

Challenge 3: conditions and actions

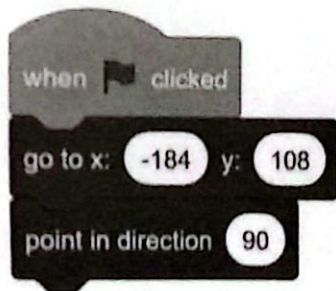
Look carefully at these algorithms and find the conditions and actions.

3.



a) What is the condition?

b) What is the action?



c) What is the condition?

d) What is the action?



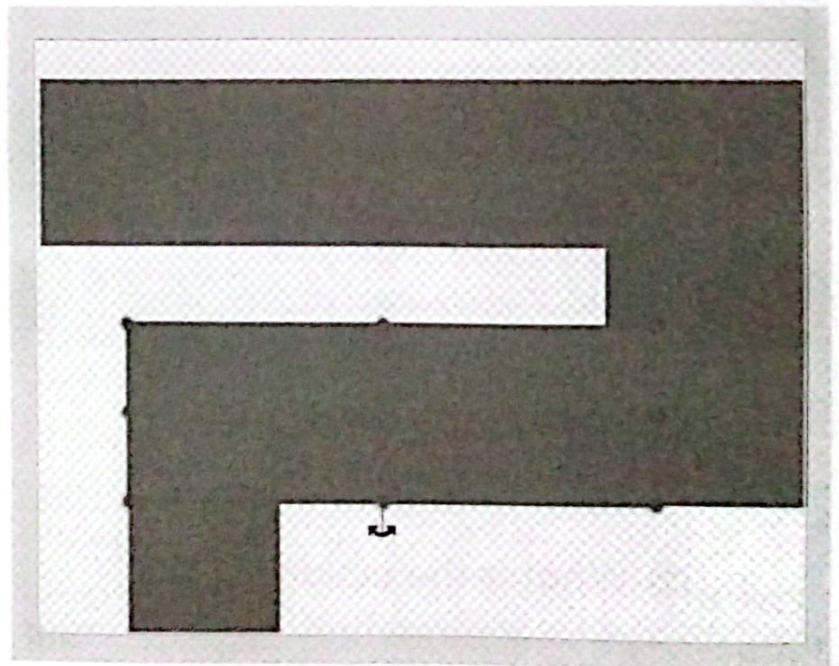
Lesson 8

Using conditional selection and collision detection in your game

1. Think about what would make a good maze game. Write down your ideas below.

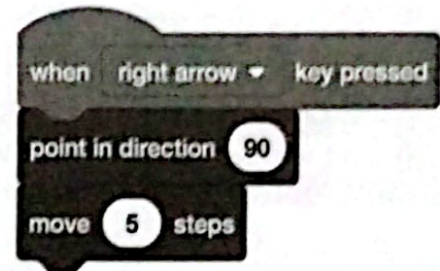
2. To create a maze, a new backdrop needs to be created.
a) Which tool has been used to create the example shown?

- A box tool
- B maze tool
- C rectangle tool
- D area tool



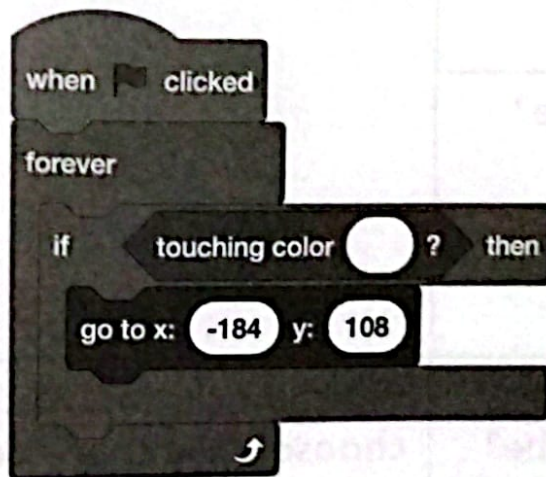
b) This group of blocks shows how to move the character to the right.

Three more groups are needed to move the sprite. Complete the table below of key presses and directions.



Key	Point in direction (angle)
right-arrow	90
left-arrow	
up-arrow	
down-arrow	

c) If the following group of blocks is added, what will happen to the sprite?



Extra activity

For an extra challenge to your maze, add one or more of the following:

- a timer
- a scoreboard
- a message to tell the player when the game is complete.



Lesson 9

Planning your Scratch game

I. With a partner, plan your Scratch maze game.

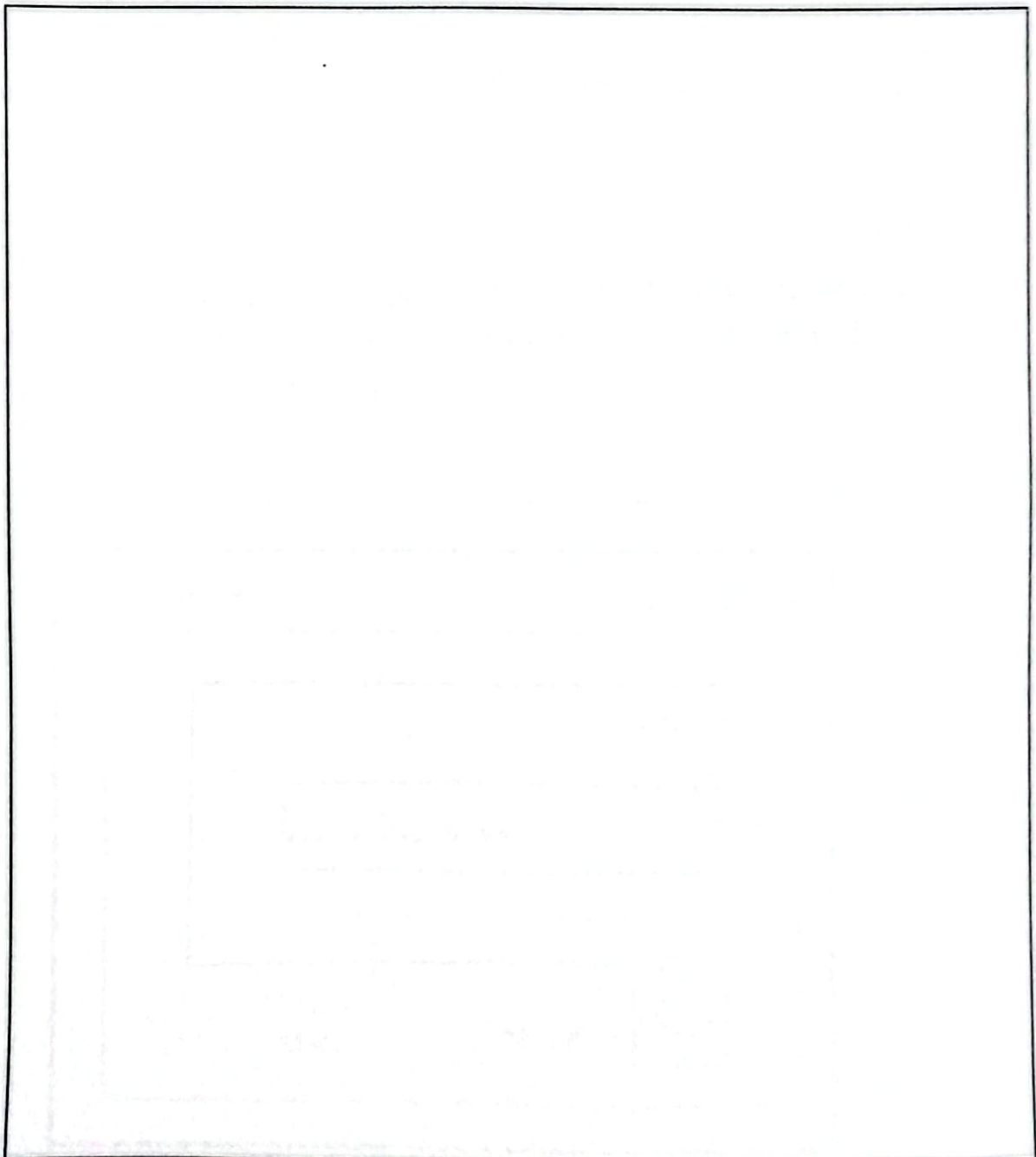
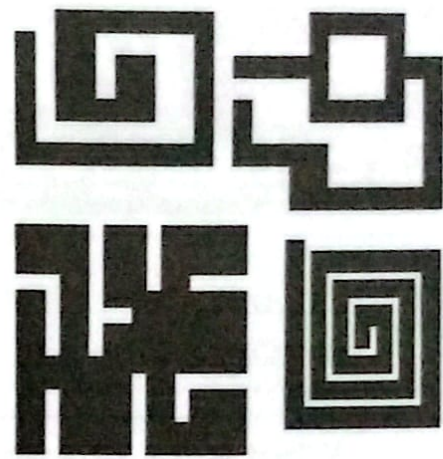
In your planning, think about:

- what your game will look like – does it have a theme?
- what inputs, sequence or conditional actions will be used
- what sprites and backdrops will be used.

Make some notes below.

What is the program called?	What will the player be trying to do?
Which sprites will you use?	
Will your sprites change any costumes? What will they be?	Which backdrop will you choose? Will there be more than one?

2. Use these maze designs for ideas and create your own below. Label the sprites and parts of your maze.



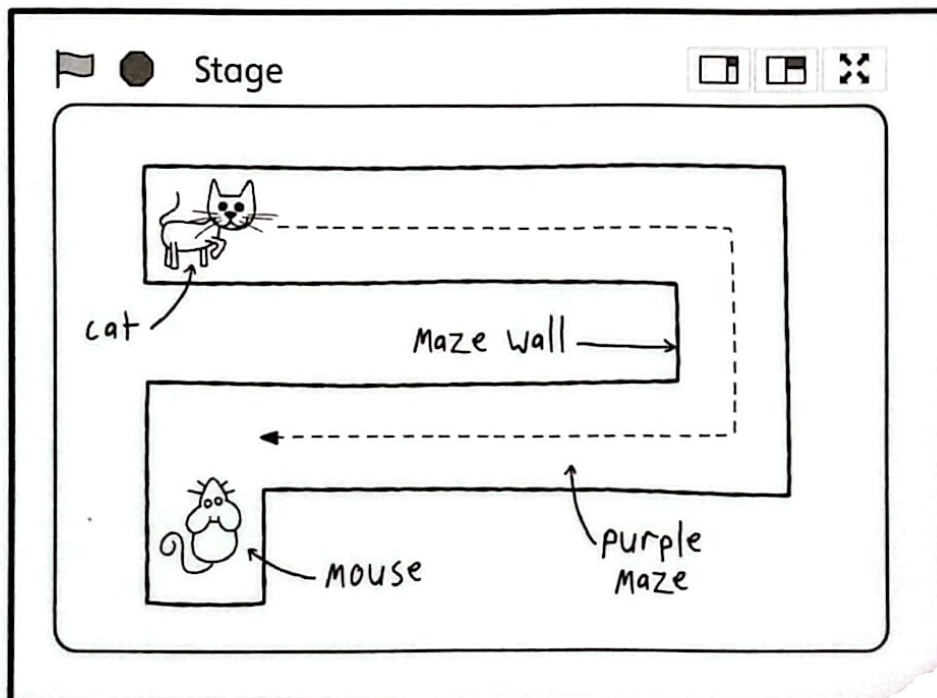


Lesson 10

Creating your maze game

- I. With a partner, create your Scratch maze game. Use your completed plan and the example below to help you.

What is the program called? Cat and Mouse	What will the player be trying to do? Catch the mouse by moving Scratch with the arrow keys without touching the sides!
Which sprites will you use? Cat-a (Scratch) Mouse1	
Will your sprites change any costumes? What will they be? Mouse1-a Mouse1-b	Which backdrop will you choose? Will there be more than one? Purple maze



2. Look at the Scratch mazes created by other students and give some feedback.

I really liked _____

I think they could improve their maze by _____

Unit 6

End-of-unit assessment

- 1 Look at the following code.

```
IF your partner passes you a pencil THEN  
    Start writing  
ELSE  
    Twiddle your thumbs
```

- a) Which part is the condition?

- b) Which are the two actions?

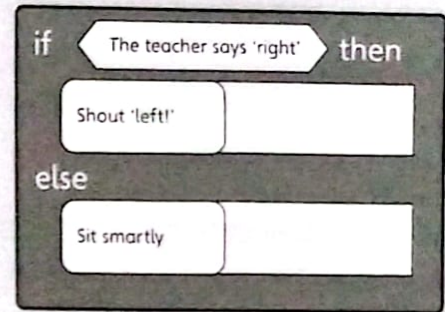
(2 marks)

- 2 What does a 'forever' block do?

- A When you put it in a code, the sprite says the word 'forever'. ☐
- B When you put it in a code, the program keeps repeating over and over. ☐
- C When you put it in a code, the code stops forever. ☐
- D When you put it in a code, it does not do anything. ☐

(1 mark)

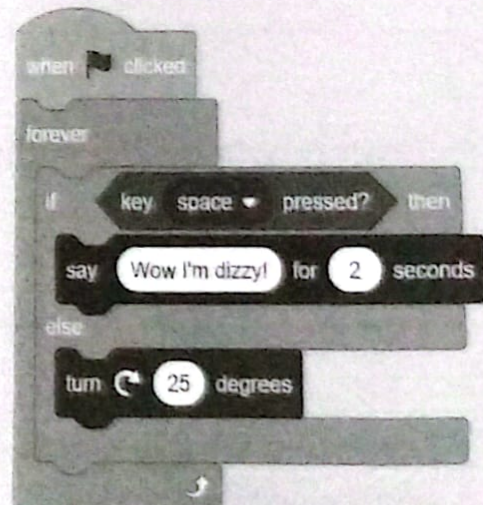
- 3 What will happen if this algorithm is run?



- A When the teacher says 'right', you would sit smartly. ☐
- B When the teacher says 'left', you would sit smartly and shout 'left!'. ☐
- C When the teacher says 'right', you would shout 'left!', otherwise sit smartly. ☐
- D When the teacher says 'left', you would shout 'left!'. ☐

(1 mark)

- 4 Look at the code and answer the questions below.



- a) Which part is the condition?

- b) Which part is the action?

(2 marks)