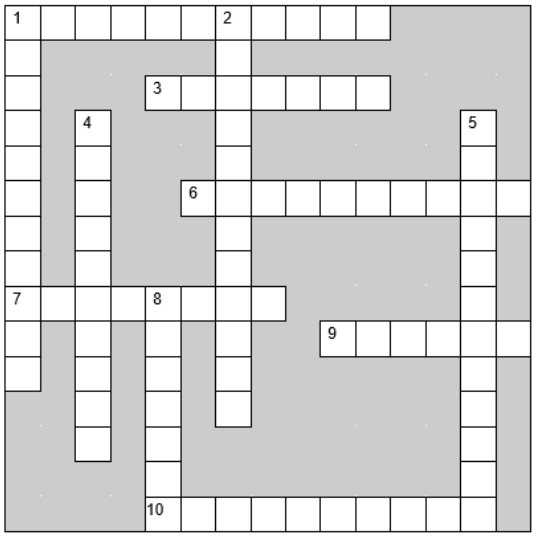
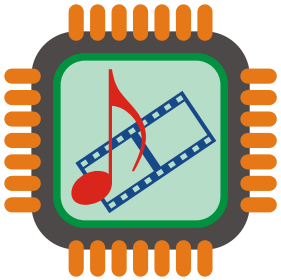
REPRESENTATIONS GOING AUDIOVISUAL - REVISION ACTIVITIES

TASK 1: WHAT AM I? WHAT DO I DO?

TASK 2: KEYWORDS CROSSWORD





Across

1 Any procedure that reduces the size of a representation (11)

3 To represent sound in digital form, regular measurements are taken and a sequence of bits is recorded for each one of them (7)

6 Piece of equipment that converts sound to electricity (10)

7 Vibrations can set particles in motion, generating variations in density (8)

9 The elements of a digital image, arranged in a grid of columns and rows (6)

10 The number of pixels in a digital image (10)

Down

1 The number of binary digits used to represent the colour of each pixel (6,5)

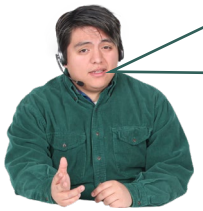
2 The number of measurements taken per second (8,4)

4 The number of binary digits recorded for each measurement (6,4)

5 Perform arithmetic operations on binary digits in an image (12)

8 Piece of equipment that converts electricity to sound (7)

TASK 3: RESOLUTION



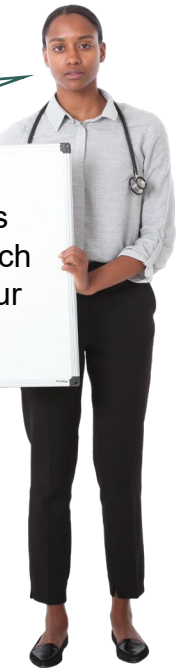
This is a high resolution image taken with a digital camera

What are the benefits and drawbacks of high resolution images?

TASK 4: COLOUR DEPTH

Can you unjumble the sentence to the right to complete the notes you need on colour depth?

represent of digits used to number each binary pixel's colour (fixed) The



For every pixel, a sequence of binary digits represents its colour. _____

_____

_____

_____

_____

NAME:

CLASS:

NAME:

CLASS:

TASK 5: PIXEL COLOUR BY NUMBER

5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5	8	5	5	5	5	5	5	5
5	5	5	5	5	5	5	3	0	3	5	5	5	5	5	5
5	5	5	1	1	5	5	3	0	3	5	5	5	8	5	5
5	5	1	3	3	1	5	5	5	5	5	5	3	0	3	5
5	5	1	3	3	1	5	5	5	5	5	5	3	0	3	5
5	5	5	1	1	5	5	5	8	5	5	5	5	5	5	5
5	5	5	5	4	5	5	3	0	3	5	5	5	5	1	5
5	1	1	5	4	5	5	3	0	3	5	5	5	1	3	1
1	3	3	1	4	5	5	5	5	5	5	6	5	5	1	5
1	3	3	1	4	5	6	5	5	5	6	2	6	5	4	5
4	1	1	5	4	6	2	6	5	5	5	6	5	1	1	5
4	7	6	6	4	5	6	5	1	1	5	4	1	3	3	1
4	6	2	2	6	7	4	1	3	3	1	4	1	3	3	1
4	6	2	2	6	7	4	1	3	3	1	4	7	1	1	4
4	7	6	6	7	7	4	7	1	1	4	4	7	7	7	4

KEY

0
1
2
3
4
5
6
7
8

TASK 6: RGB FLAG

R: 0 G: 0 B: 0

R: 218 G: 41 B: 28

R: 255 G: 205 B: 0

In the flag above the RGB values to the right of each row are the band's colour – colour the rows in!

Which country does the flag belong to?

TASK 7: IT'S BLACK AND WHITE

How many colours does a black and white image have? _____

How many bits are needed to represent the colour(s)? _____

TASK 8: HOW MANY BITS ARE REQUIRED TO REPRESENT AN IMAGE?

Bits needed = Resolution (rows x columns) X colour depth (how many bits represent the colour of each pixel)

11	11	11	11
00	00	00	00
10	10	10	10

5

10

	11
	00
	10

What is the resolution of this image?

What is the colour depth of this image? Why?

How many bits are needed?

NAME: CLASS:

TASK 9: GRAPHICS SOFTWARE

What do these graphics software tools help with?

Transform	
Retouching	
Filters	
Blur	
Dodge/Burn	
Crop	
Zoom	
Layers	

TASK 10: ANALOGUE VS DIGITAL

True (T) or False (F)?	**T/F**
Microphones are digital	
Sound needs to be converted into binary for computers to be able to process it	
Special hardware converts the analogue signal to the binary representation	

TASK 11: THE NATURE OF SOUND

Add the keyword and a few words to explain why it is important

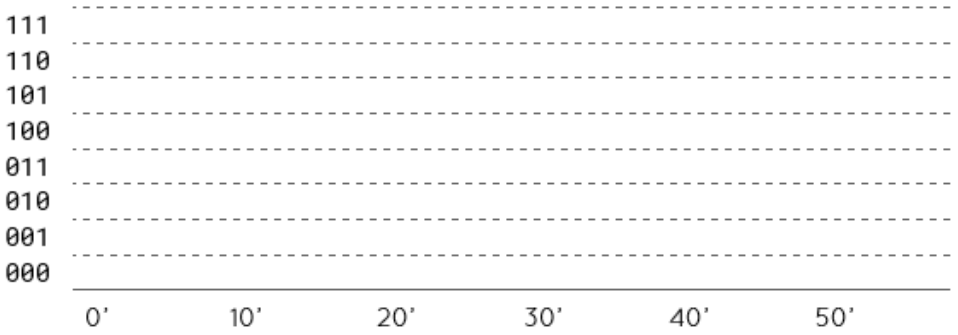
Image	**Keyword**	**What is important about this word for this topic?**
		
		

TASK 12: THE NATURE OF SOUND

This is a sequence of bits received from a single location in the course of an hour:

001 100 111 000 010 011

Can you (approximately) graph the strength of the signal in that hour?



NAME:

CLASS:

TASK 13: SAMPLING RATE

Can you decrypt the definition for the **sampling rate** of digitised sound?
You can also complete online at bit.ly/digitisedsound

ENCRYPTION TABLE

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
18				7				1						8	

Q	R	S	T	U	V	W	X	Y	Z
				20					

ENCRYPTED SENTENCE

	O	
2	8	23

	A			
3	18	5	9	

	A					
21	18	3	10	14	7	21

	E	
10	7	6

	E		O		
21	7	26	8	5	22

		E
4	2	7

	O	U		
21	8	20	5	22

	O				I			
26	8	5	21		1	21	4	21

O	
8	11

TASK 14: FILL IN THE GAP

Complete this paragraph using the correct keywords

SAMPLES | SAMPLE SIZE | BITS | SAMPLE BYTE | SAMPLING RATE

To represent sound in digital form, regular measurements are taken, called _____ and a sequence of _____ is recorded for each one of them. The number of binary digits recorded for each measurement is called the _____

TASK 15: SOUND ADVANTAGES & DISADVANTAGES

What are the advantages and disadvantages of a sounds with a high sampling rate and a high sample size are?

TASK 16: FILL IN THE GAP

At breaktime you take a digital recorder out and set the **sampling rate** to 60,000 samples per second and the **sample size** to 16 bits per sample. You stop recording after 60 seconds. How many binary digits are required to represent that sound? Show your working out!

TASK 17: READING

1. Read the BBC Bitesize sections for this unit:

- https://www.bbc.co.uk/bitesize/guides/zpfdwmn/revision/2
- https://www.bbc.co.uk/bitesize/guides/zpfdwmn/revision/3

2. Take the test and record your score here _____

TASK 18: KEYWORDS ARCADE GAME

Play the Keywords arcade game at bit.ly/representav