



Cambridge International AS & A Level

INFORMATION TECHNOLOGY

9626/04

Paper 4 Advanced Practical

May/June 2023

2 hours 30 minutes



You will need: Candidate source files (listed on page 2)

INSTRUCTIONS

- Carry out **every** instruction in **each** task.
- Save your work using the file names given in the task as and when instructed.
- You must **not** have access to the internet or any email system during this examination.
- You must save your work in the correct file format as stated in the tasks. If you save work in an incorrect file format, you will **not** receive marks for that task.

INFORMATION

- The total mark for this paper is 90.
- The number of marks for each task or part task is shown in brackets [].

This document has **8** pages. Any blank pages are indicated.

You have been supplied with the following source files:

Animate.js
BranchData.ods
Spiral0.png
Spiral1.png
Spiral2.png
StopMotionAnimation.html

Create a folder called **Examination**. You must save all your work in this folder.

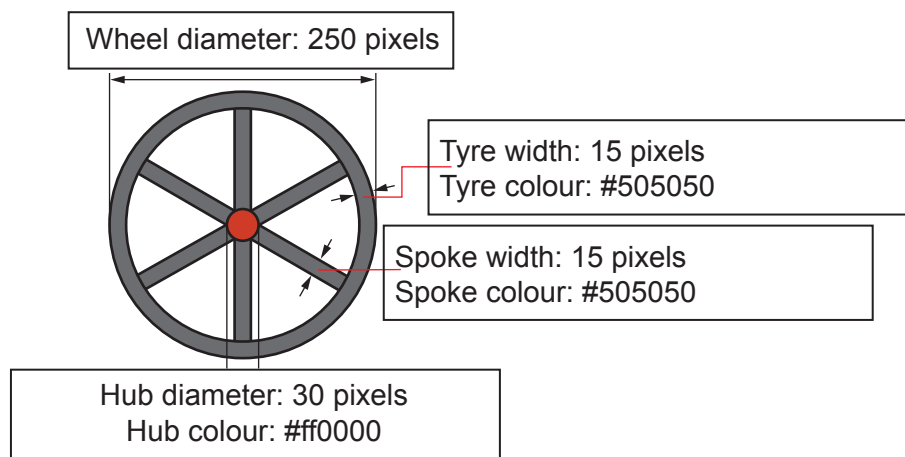
Copy these files into this folder.

Do **not** delete these files when submitting your work.

You must use the most efficient methods to solve each task. All work produced must be of a professional standard and contain your candidate details.

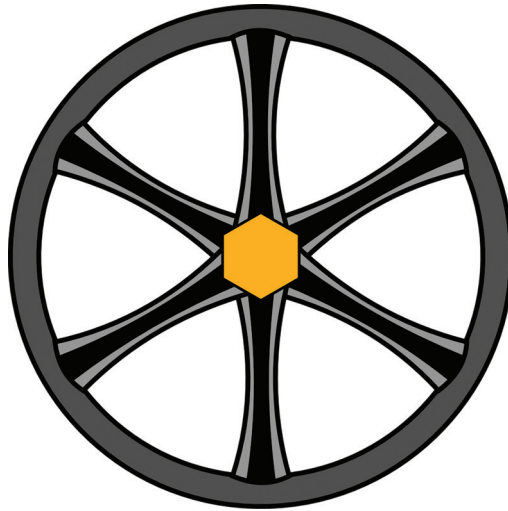
Task 1 – Vector graphics

(a) Create a copy of this image. Use the following properties:



Save the image as an **SVG** file named **BasicWheel_** followed by your centre number_candidate number e.g. BasicWheel_ZZ999_9999 [6]

(b) Edit your *BasicWheel* file to create this image.



Note the following features of the spokes and the hub:



Save the image as an **SVG** file named **NewWheel_** followed by your centre number_candidate number
e.g. NewWheel_ZZ999_9999 [11]

Task 2 – A stop motion animation

Use your *BasicWheel* image to create a stop motion animation of a conveyor belt.

Set a frame size of 400 pixels wide by 100 pixels high with a transparent background.

Set a time of 100 milliseconds (0.1 seconds) for each frame.

Resize your *BasicWheel* image to 60 pixels.

The belt must be approximately 5 pixels thick.

There must be a short yellow patch in the belt to simulate a join.

The whole image must almost fill the width of the frame.

The wheels must both rotate clockwise at the same speed.



The belt with the yellow join must run around the wheels as shown here.



The animation must loop indefinitely.

Save the animation as an **animated gif** named **ConveyorBelt_** followed by your centre number_candidate number
e.g. ConveyorBelt_ZZ999_9999



[20]

Task 3 – A spreadsheet challenge

Open **BranchData.ods** in a spreadsheet application.

The workbook contains data on sales by staff at company branches in different countries.

Examine each worksheet.

- The *BranchData* worksheet lists details of all the staff employed by the company including the *Reference code* of their branch.
- The *CountryCodes* worksheet lists all the countries where the company has branches and their 3-letter codes. These codes are part of the *Reference code*.

Save the spreadsheet as **BranchData_** followed by your centre number_candidate number
e.g. BranchData_ZZ999_9999

You will use this spreadsheet to calculate the total sales for each country.

You are required to provide evidence of your work when instructed. Create an Evidence Document named **Evidence_** followed by your centre number_candidate number
e.g. Evidence_ZZ999_9999

Enter formulas in column F to extract the *Country code* from the *Reference code*.

	A	B	C	D	E	F
1						
2	Given name	Family name	Payroll number	Reference code	Sales (€)	Country code
3	Dima	Beaumont	DBE6276031	84-AUT-44	€ 25,600	AUT
4	Bedia	Benjamin	BBE6774031	298-BEL-37	€ 48,600	BEL
5	Saman	Breebaart	SBR4760031	272-CHE-198	€ 32,600	CHE
6	Vince	Claessens	VCL8961031	540-CYP-37	€ 10,800	CYP
7	Kalina	Daalhuizen	KDA4588031	1508-CZE-53	€ 23,200	CZE
8	Ermin	Finke	EFI4552031	1378-DEU-17	€ 26,700	DEU
9	Antsje	Gerrits	AGE1141031	268-DNK-63	€ 36,500	DNK
10	Anne-Claire	Greuter	AGR1620031	955-ESP-166	€ 19,500	ESP

Extract a list of the unique country codes from column F and display the data in cells H9 and below.

Provide evidence of your method in your Evidence Document.

Use the data in the *CountryCodes* worksheet to display the country represented by each code in cells I9 and below.

Calculate the total of the sales for each country as shown.

	H	I	J
7	Total Sales by Country		Total
8	Country		
9	AUT	Austria	€ 153,500
10	BEL	Belgium	€ 178,200
11	CHE	Switzerland	€ 219,200
12	CYP	Cyprus	€ 121,100
13	CZE	Czechia	€ 195,000
14	DEU	Germany	€ 189,700
15	DNK	Denmark	€ 225,600
16	ESP	Spain	€ 192,720
17	EST	Estonia	€ 204,300
18	FIN	Finland	€ 203,200
19	FRA	France	€ 191,900
20	GRC	Greece	€ 268,400
21	HRV	Croatia	€ 238,100
22	HUN	Hungary	€ 183,700
23	IRL	Ireland	€ 189,000
24	ITA	Italy	€ 183,200
25	LUX	Luxembourg	€ 228,900
26	NLD	Netherlands	€ 119,400
27	NOR	Norway	€ 209,700
28	POL	Poland	€ 187,100
29	SRB	Serbia	€ 196,800

In cell J3 enter a formula to display the number of countries that meet or exceed a *Sales Target* entered in cell H3.

	H	I	J
2	Sales Target		Number meeting target
3	€ 220,000		4
4			

Automatically format the data for the countries that meet or exceed the *Sales Target* as shown.

Total Sales by Country		Total
Country		
AUT	Austria	€ 153,500
BEL	Belgium	€ 178,200
CHE	Switzerland	€ 219,200
CYP	Cyprus	€ 121,100
CZE	Czechia	€ 195,000
DEU	Germany	€ 189,700
DNK	Denmark	€ 225,600
ESP	Spain	€ 192,720
EST	Estonia	€ 204,300
FIN	Finland	€ 203,200
FRA	France	€ 191,900
GRC	Greece	€ 268,400
HRV	Croatia	€ 238,100
HUN	Hungary	€ 183,700
IRL	Ireland	€ 189,000
ITA	Italy	€ 183,200
LUX	Luxembourg	€ 228,900
NLD	Netherlands	€ 119,400
NOR	Norway	€ 209,700
POL	Poland	€ 187,100
SRB	Serbia	€ 196,800

Add the data for the following person:

Given name	Family name	Payroll number	Reference code	Sales (€)
Kias	Tucran	KTU412576	4-SRB-13	34300

Make sure the new data has been included in the totals.

Save your spreadsheet.

[36]

Task 4 – Programming for the web

Open **StopMotionAnimation.html** in a browser and in a text editor.

The webpage must show a looping stop motion animation that starts when the *Start* button is clicked and displays each of 3 images (**Spiral0**, **Spiral1**, **Spiral2**) for 0.1 seconds (1 tenth of a second). The animation must loop indefinitely.

1 second = 1000 milliseconds.

Task 4 Programming for the web JavaScript

A stop motion animation



Click the button to start the animation



Open **Animate.js** in a text editor.

Amend the *StopMotionAnimation.html* page to use the *Animate.js* script.

Complete the `Animate()` function and the `Timer()` function to cycle through the images displaying them at the “ImageDisplay” bookmark in the html file.

Save the animation as **SpiralAnimation_** followed by your centre number_candidate number
e.g. `SpiralAnimation_ZZ999_9999`

[14]

Edit your solution to include a button under the *Start* button.
Add code so that clicking the button stops the animation.

Save the animation as **SpiralStop_** followed by your centre number_candidate number
e.g. `SpiralStop_ZZ999_9999`

[3]

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