



# 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:

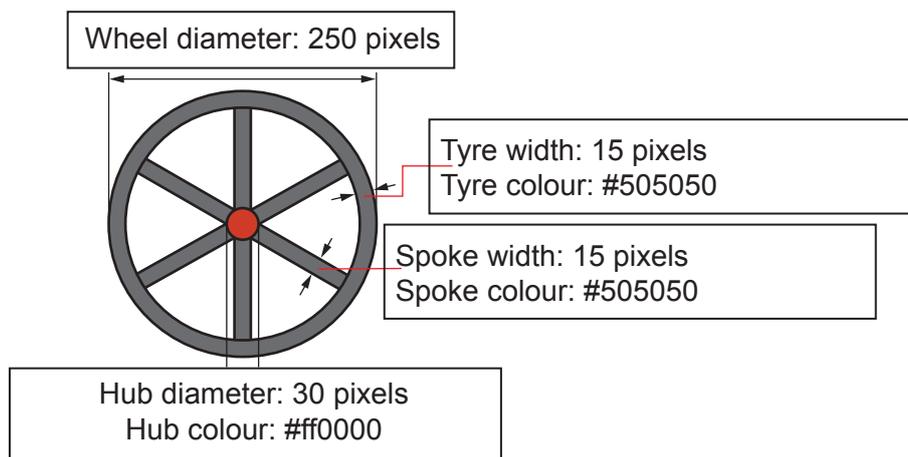
**Animate.js**  
**BranchData.ods**  
**Spiral0.png**  
**Spiral1.png**  
**Spiral2.png**  
**StopMotionAnimation.html**

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.*

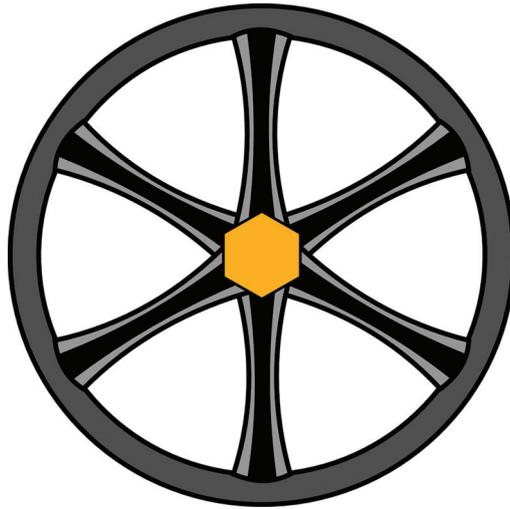
### Task 1 – Vector graphics

(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

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### 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  | <b>Total Sales by Country</b> |             | <b>Total</b> |
| 8  | <b>Country</b>                |             |              |
| 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 | <b>Sales Target</b> |   | <b>Number meeting target</b> |
| 3 | € 220,000           |   | 4                            |
| 4 |                     |   |                              |

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

| <b>Total Sales by Country</b> |                   | <b>Total</b>     |
|-------------------------------|-------------------|------------------|
| <b>Country</b>                |                   |                  |
| AUT                           | Austria           | € 153,500        |
| BEL                           | Belgium           | € 178,200        |
| CHE                           | Switzerland       | € 219,200        |
| CYP                           | Cyprus            | € 121,100        |
| CZE                           | Czechia           | € 195,000        |
| DEU                           | Germany           | € 189,700        |
| <b>DNK</b>                    | <b>Denmark</b>    | <b>€ 225,600</b> |
| ESP                           | Spain             | € 192,720        |
| EST                           | Estonia           | € 204,300        |
| FIN                           | Finland           | € 203,200        |
| FRA                           | France            | € 191,900        |
| <b>GRC</b>                    | <b>Greece</b>     | <b>€ 268,400</b> |
| <b>HRV</b>                    | <b>Croatia</b>    | <b>€ 238,100</b> |
| HUN                           | Hungary           | € 183,700        |
| IRL                           | Ireland           | € 189,000        |
| ITA                           | Italy             | € 183,200        |
| <b>LUX</b>                    | <b>Luxembourg</b> | <b>€ 228,900</b> |
| 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.

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## 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`

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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`

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