



Be World Class

Autumn Term

Term 1

Triple Science

Year 10

Name: _____

Tutor: _____

Year 10 Homework Timetable

Monday	English Exam Question	English Sparx	Maths Sparx
Tuesday	Option A Exam Question	Science Carousel	Science Sparx
Wednesday	Option B Exam Question	Option A Carousel	Maths Sparx
Thursday	Option C Exam Question	Option B Carousel	Science Sparx
Friday	Science Exam Question	Option C Carousel	Catch Up Sparx

Sparx Science

- Complete 100% of their assigned homework each week

Sparx Maths

- Complete 100% of their assigned homework each week

Option A (EBACC)	Option B	Option C
Computer Science	Business Studies	Art
Languages	Hospitality and Catering	Business Studies
Geography	Drama	Hospitality and Catering
History	Music	Computer Science
	Geography	Drama
	Health and Social Care	Photography
	ICT	Science (Triple)
	Media Studies	Sport
	Music	
	Religious Studies	
	Sport	
	Travel and Tourism	

Half Term 1 (7 weeks) - Year 10

Week / Date	Homework task 1 Carousel Quiz	Homework task 2 Exam Question	Homework Task 3 - Triple Exam Question
Week 1 7th September 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 2 14th September 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 3 21st September 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 4 28th September 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 5 5th October 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 6 12th October 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 7 19th October 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%

Half Term 2 (6 weeks) - Year 10

Week / Date	Homework task 1 Carousel Quiz	Homework task 2 Exam Question	Homework Task 3 - Triple Exam Question
Week 8 9th November 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 9 16th November 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 10 23rd November 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 11 30th November 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 12 7th December 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%
Week 13 14th December 2026	Complete the questions on Carousel, these will be tested in your LSQ	Complete the exam question. Ensure Sparx is at 100%	Complete the exam question. Ensure Sparx & Carousel are both at 100%

Week 1 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Cells are the basic units of all forms of life. Describe four differences between a bacterial cell and a plant cell. (4)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Improvement Work: Cells are the basic units of all forms of life. Describe four differences between a bacterial cell and a plant cell. (4)

Week 1 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

During a food poisoning outbreak, scientists identified the farm where the food came from.

The farmer had not vaccinated the farm animals against Salmonella bacteria.

(b) The food poisoning outbreak could have been prevented if the farm animals had been vaccinated.

Explain how:

- the immune systems of animals respond to a vaccination
- the immune response in farm animals prevents an outbreak of food poisoning in humans.

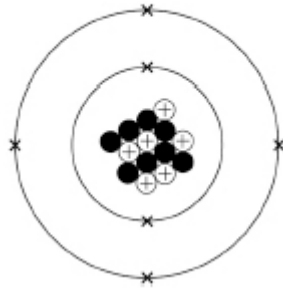
(4)

[illegible]

Improvement Work: Explain how the immune systems of animals respond to a vaccination **and** the immune response in farm animals prevents an outbreak of food poisoning in humans.

Week 2 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Figure 1



Describe the atomic structure of this carbon atom. You should include the number of electrons, neutrons and protons. (6)

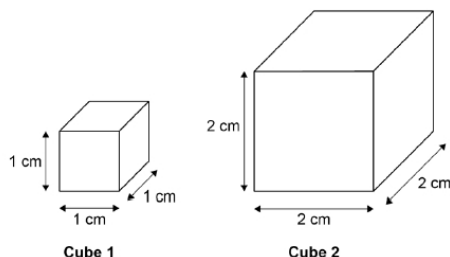
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Improvement Work: Describe the atomic structure of this carbon atom. You should include the number of electrons, neutrons and protons. (6)

Week 2 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

A student used cubes of potato to investigate the effect of surface area and volume on the rate of osmosis.

The diagram shows two of the cubes of potato the student used.



The surface area to volume ratio of **cube 1** is 6:1.

- (a) Calculate the total surface area of **cube 2**.

$$\text{Total surface area of cube 2} = \underline{\hspace{2cm}} \text{ cm}^2$$

(1)

- (b) Calculate the volume of **cube 2**.

$$\text{Volume of cube 2} = \underline{\hspace{2cm}} \text{ cm}^3$$

(1)

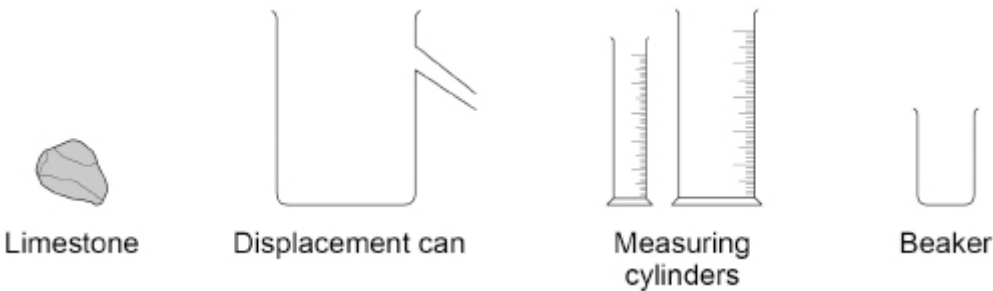
- (c) Calculate the surface area to volume ratio of **cube 2**.

Use the equation:

$$\text{surface area to volume ratio} = \frac{\text{surface area}}{\text{volume}}$$

$$\text{Surface area to volume ratio of cube 2} = \underline{\hspace{2cm}} : 1 \quad (1)$$

Week 3 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.



Describe a method the student could use to determine the volume of the piece of limestone. (4)

Improvement Work: Describe a method the student could use to determine the volume of the piece of limestone. (4)

Week 3 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Spiders produce a protein thread which is extremely strong compared to man-made fibres of the same diameter.



Spider's web

Explain how genes control the way the protein is made in the spider's body.

[illegible]

Improvement Work: Explain how genes control the way the protein is made in the spider's body.

(4)

[illegible]

Week 4 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Malaria is transmitted by mosquitoes. Male mosquitoes can be sterilised so they are infertile. The spread of malaria is reduced by releasing sterile mosquitoes into the environment. Explain how releasing sterile mosquitoes reduces the spread of malaria. (2)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Improvement Work: Explain how releasing sterile mosquitoes reduces the spread of malaria.
(2)

Week 4 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

At the end of meiosis the number of chromosomes is different from the number of chromosomes at the start of meiosis.

Explain why the change in the number of chromosomes is important. (3)

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Improvement Work: Explain why the change in the number of chromosomes is important. (3)

Week 5 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Gold is a metal. Describe the structure of a metal. (3)

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Improvement Work: Gold is a metal. Describe the structure of a metal. (3)

Week 5 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Meiosis produces cells that are genetically different.

Describe how meiosis produces cells that are genetically different. (2)

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Improvement Work: Describe how meiosis produces cells that are genetically different. (2)

Week 6 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

The person on the scales has a mass of 55 kg. Gravitational field strength = 9.8 N/kg

Calculate the weight of the person. (3)

[illegible]

Improvement Work: The person on the scales has a mass of 55 kg. Gravitational field strength = 9.8 N/kg. Calculate the weight of the person. (3)

Week 6 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Explain why alloys are harder than pure metals (3)

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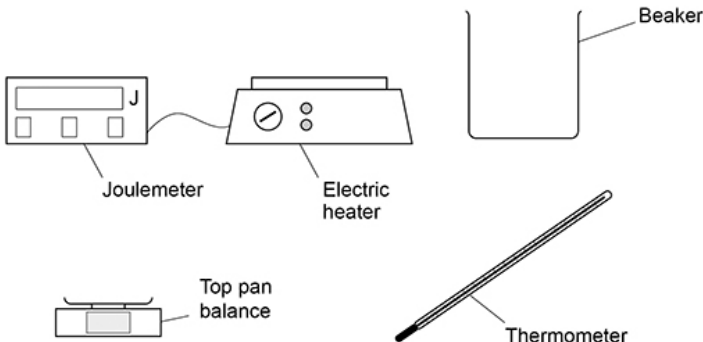
Improvement Work: Explain why alloys are harder than pure metals (3)

Week 7 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

A student made measurements to determine the specific heat capacity of vegetable oil.

Figure 1 shows the equipment used.

Figure 1



Describe how the student could use the equipment shown in Figure 1 to determine the specific heat capacity of vegetable oil. (6)

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Improvement Work: Describe how the student could use the equipment shown in Figure 1 to determine the specific heat capacity of vegetable oil. (6)

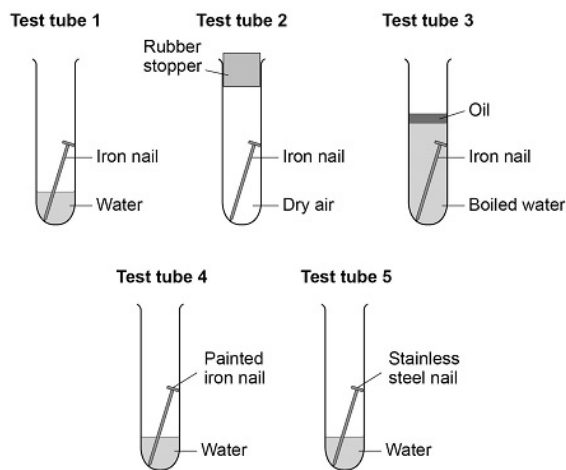
Week 7 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

This question is about the corrosion of metals. The corrosion of iron is called rusting.

A student investigated the rusting of iron.

This is the method used

- 1. Set up the test tubes as shown in the figure below.
- 2. Leave the test tubes for 1 week.
- 3. Examine the nails for signs of rust.



Explain what would happen to the nails in each of the test tubes (5)

Improvement Work: Explain what would happen to the nails in each of the test tubes (5)

Week 8 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Give two reasons why aluminium should be recycled. (2)

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Improvement Work: Give two reasons why aluminium should be recycled. (2)

Week 8 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

A person with late stage HIV infection has AIDS.

Scientists have produced monoclonal antibodies for HIV.

The monoclonal antibodies can prevent a person infected with HIV developing AIDS.

(g) Describe how the monoclonal antibody for HIV can be produced. (4)

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Improvement Work: Describe how the monoclonal antibody for HIV can be produced. (4)

Week 9 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

The temperature of a thermistor increases. The potential difference across the component remains constant. Explain what happens to the current in the component. (2)

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Improvement Work: The temperature of a thermistor increases. The potential difference across the component remains constant. Explain what happens to the current in the component. (2)

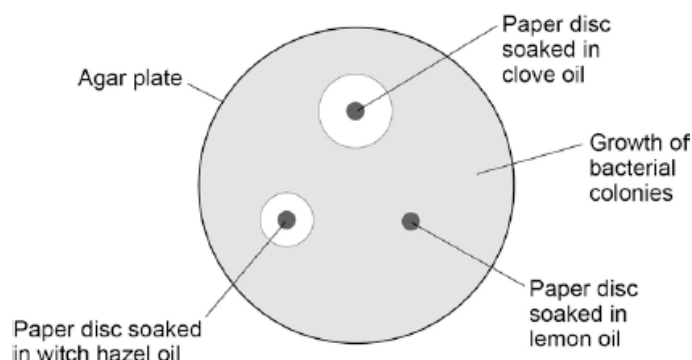
Week 9 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Witch hazel is another plant adapted for defence.

Witch hazel produces oil with antiseptic properties. The oil prevents bacteria from attacking the plant.

A student investigated how effective three different plant oils were at preventing the growth of bacteria.

Figure 2 shows the results.



Which plant oil is the most effective at preventing the growth of bacteria?

Give a reason for your answer.

Oil _____

Reason _____

(2)

(c) The student tested tea tree oil using the same method.

The results showed tea tree oil was the most effective at preventing bacterial growth.

The student concluded that tea tree oil could be used to treat bacterial infections instead of antibiotics.

Give **one** reason why this is **not** a valid conclusion.

_____ (1)

Week 10 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Gonorrhoea is a bacterial disease. A new vaccine is being developed against gonorrhoea.

Describe how a vaccine would work to prevent gonorrhoea. (4)

[illegible]

Improvement Work: Describe how a vaccine would work to prevent gonorrhoea. (4)

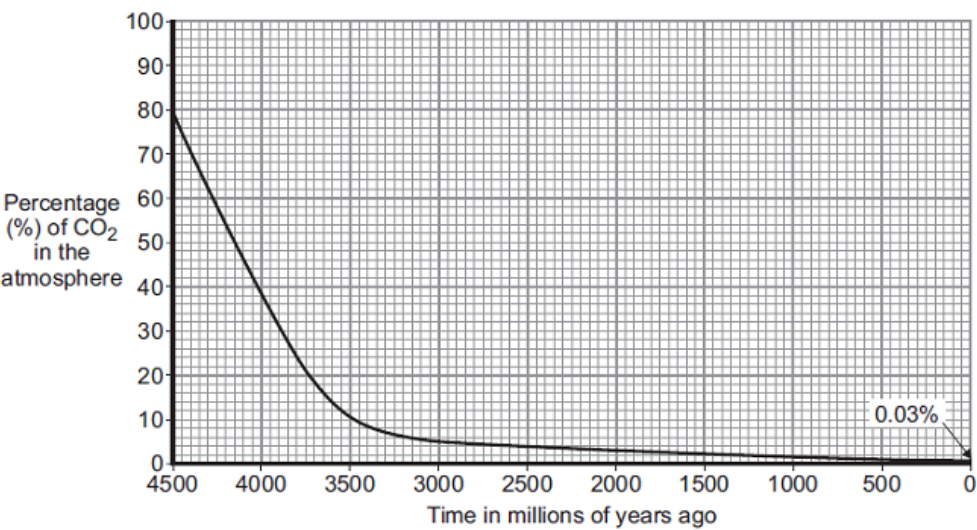
Week 10 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Describe how ceramic food plates are produced from clay. (2)

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Improvement Work: Describe how ceramic food plates are produced from clay. (2)

Week 11 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.



Use information from Graph 1 to answer these questions.

Describe how the percentage of carbon dioxide has changed in the last 4500 million years. (2)
Give two reasons why the percentage of carbon dioxide has changed. (2)

Improvement Work: Describe how the percentage of carbon dioxide has changed in the last 4500 million years. (2) Give two reasons why the percentage of carbon dioxide has changed. (2)

Week 11 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

This question is about titanium dioxide (TiO_2).

- (a) Self-cleaning windows are coated with a layer of nanoparticles of titanium dioxide.

Titanium dioxide:

- helps sunlight break down dirt particles
- attracts water, so dirt is washed away by rain.

Nanoparticles of titanium dioxide are used instead of fine particles of titanium dioxide for coating self-cleaning windows.

Suggest **two** reasons why. (2)

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Improvement Work: Suggest two reasons why. (2)

Week 12 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Explain how greenhouse gases cause global warming. (4)

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Improvement Work: Explain how greenhouse gases cause global warming. (4)

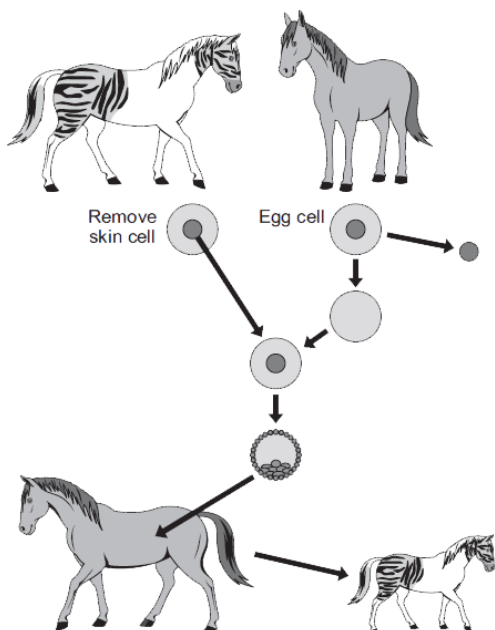
Week 12 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Zorses are **not** able to breed.

Scientists could produce more zorses from this zorse by adult cell cloning.

The diagram shows how the scientists might clone a zorse.

Use information from the diagram and your own knowledge to describe how adult cell cloning could be used to clone a zorse. (6)

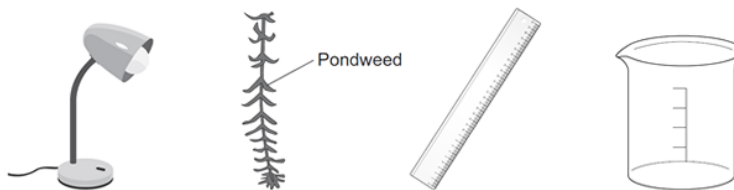
[illegible]

Improvement Work: Use information from the diagram and your own knowledge to describe how adult cell cloning could be used to clone a zorse. (6)

Week 13 Task 2 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

How would you investigate the effect of light intensity on the rate of photosynthesis?

The image below shows some of the apparatus you might use. (6)



You should include details of how you would set up the apparatus and the materials you would use, the measurements you would make and how you could make this a fair test.

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Improvement Work: How would you investigate the effect of light intensity on the rate of photosynthesis? (6)

Week 13 Task 3 - Complete the exam question using full sentences. Then ensure Sparx and Carousel are both completed to 100%.

Organisms can be produced by asexual reproduction and by sexual reproduction.

(a) Give **two** differences between asexual reproduction and sexual reproduction.

- 1. _____

- 2. _____

(2)

(b) Adult cell cloning is a type of asexual reproduction.

Explain why.

- _____
- _____
- _____
- _____

(2)

Improvement Work:
