



# Chester Hill High School

Strength in Unity, Excellence in Education

## Year 9 Semester One Assessment Task

<b>Course:</b>	Science	<b>Year:</b>	9
<b>Topic:</b>	Survivor		
<b>Assessment Name:</b>	Investigating disease		
<b>DATE DUE:</b>		<b>Total Mark/Weighting</b>	/50
<b>STUDENT NAME:</b>			
<b>Progress Check</b>	<input type="checkbox"/>		
<b>Progress Check Date:</b>		<b>Total Mark</b>	

I certify that

- This assignment is my own work, based on my personal study and/or research.
- I have **acknowledged all material and sources used in the preparation** of this assignment in a **reference list**.
- Submitted assignments based on group work are not the same as other students' work.
- I have not plagiarised (copied) in part, or in whole the work of other students.
- I have read and I understand the success criteria used for this assessment
- **I have kept a copy of my assignment and the receipt.**
- I understand that a copy of my assignment may be kept and used to make comparisons with other assignments in the future

Student's Signature: ..... Date: .....



### **Assessment Task Student Receipt**

*(This receipt should be kept as proof of assessment submission)*

<b>FAMILY NAME:</b>	<b>GIVEN NAME:</b>
<b>TEACHER:</b>	<b>CLASS:</b>
<b>DATE DUE:</b>	<b>DATE SUBMITTED:</b>
<b>TITLE OF TASK:</b> Investigating Disease	<b>TEACHER'S SIGNATURE:</b>

## Task Information

<b>Important idea(s) being explored:</b>	<p>Multicellular organisms rely on coordinated and interdependent internal systems to respond to changes in their environment.</p> <p>Advances in scientific understanding often rely on developments in technology.</p>
<b>Skills, Knowledge and understanding being demonstrated:</b>	<p><b>Part 1: Communicating Scientifically</b>            Students will develop their research skills to gather information on diabetes. They will link this information to the coordination systems of the body. They will process and analyse this information to answer questions about a case study presented to them.</p> <p>Students will also research recent technological advances being made in the field of diabetes treatments.</p> <p>Students will complete a reference list for all sources used to undertake this research.</p> <p><b>Part 2 Thinking Scientifically</b>            Students will process and analyse epidemiological data to demonstrate their working scientifically skills in an examination.</p>
<b>Syllabus Outcomes:</b>	<p><b>Content Outcomes</b></p> <p>Analyses interactions between components and processes within biological systems SC5-14LW</p> <p>Explains how biological understanding has advanced through scientific discoveries, technological developments and the needs of society SC5-15LW</p> <p><b>Working Scientifically Outcomes</b></p> <p>Processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions.</p> <p>Presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations.</p>

**Feedback from student about task:**

I spent \_\_\_\_\_ hours working on this task.

The hardest part of this task was \_\_\_\_\_

The easiest was \_\_\_\_\_

What I have enjoyed most about learning in *Science* is \_\_\_\_\_

Learning in *Science* could be improved if:

\_\_\_\_\_

\_\_\_\_\_

Dear teacher, I need help in the following areas:

\_\_\_\_\_

\_\_\_\_\_

## SUCCESS CRITERIA

### PART ONE: Communicating Scientifically

#### A) DIABETES CASE STUDY (Q1-8)

ELEMENT	3	2	1	0
<b>Q1 Research skills</b>			Correctly classifies insulin	Incorrect or non-attempt
<b>Q2 Research skills</b>		Detailed description demonstrating a high level of understanding of the structure of insulin	Brief description demonstrating a sound level of understanding of the structure of insulin	Incorrect or non-attempt
<b>Q3 Research skills</b>		Correctly identifies both the specific cells and organ where insulin is produced	Correctly identifies the organ where insulin is produced	Incorrect or non-attempt
<b>Q4 Research skills Process and analyse text Literacy</b>	Detailed description demonstrating a high level of understanding of the function of insulin AND correct negative feedback system	Brief description demonstrating a sound level of understanding of the function of insulin AND correct negative feedback system	Brief description demonstrating an elementary level of understanding OR Negative feedback system only	Incorrect or non-attempt
<b>Q5 Research skills Process and analyse text Literacy</b>		Detailed explanation demonstrating a high level of understanding of insulin resistance	Brief explanation demonstrating a sound level of understanding of insulin resistance	Incorrect or non-attempt
<b>Q6 Knowledge and understanding Literacy</b>		Correct identification of type of disease AND explanation	Correct identification of type of disease	Incorrect or non-attempt
<b>Q7 Research skills</b>		Identifies two modifiable risk factors	Identifies one modifiable risk factor	Non-attempt
<b>Q8 Research skills Process and analyse text Literacy</b>	Detailed explanation demonstrating a high level of understanding	Brief explanation demonstrating a sound level of understanding	Poor explanation demonstrating an elementary level of understanding	Incorrect or non-attempt

**B) BIOTECHNOLOGY ADVANCES (Q9)**

Element	3	2	1	0
<b>Q9 a Research skills</b>			Names a piece of equipment used to treat diabetes	Not attempted
<b>Q9 b Research skills</b>			Provides a picture of equipment	Not attempted
<b>Q9 c Research skills Literacy</b>	Detailed description demonstrating a high level of understanding	Brief description demonstrating a sound level of understanding	Poor description demonstrating an elementary level of understanding	Not attempted
<b>Q9 d Research skills Process and analyse text Literacy</b>		Describes two practical benefits of using equipment	Describes one practical benefit of using equipment OR Lists two practical benefits	Not attempted
<b>Q9 e Literacy</b>			Provides a justification	Not attempted

**TOTAL PART B ..... / 8**

**C) BIBLIOGRAPHY AND LITERACY**

Element	3	2	1	0
<b>Referencing skills</b>	Three or more correctly referenced sources	Two correctly referenced sources OR Three or more incorrectly referenced sources	One correctly referenced source OR Two incorrectly referenced sources	No bibliography attempted OR One incorrectly referenced source
<b>Literacy</b>		Correct punctuation and sentence structure (high level)	Some correct punctuation and sentence structure (sound level)	Incorrect punctuation and sentence structure (elementary level)

**TOTAL PART C ..... / 5**

**PART TWO: Thinking Scientifically**

<b>Element</b>	<b>Specific Criteria</b>	<b>Mark</b>
<b><i>Numeracy</i></b>	Analysis of line graph	5 4 3 2 1 0
<b><i>Numeracy</i></b>	Analysis of column graph	4 3 2 1 0
<b><i>Numeracy</i></b>	Drawing a pie chart	3 2 1 0
<b><i>Numeracy</i></b>	Drawing a column graph	5 4 3 2 1 0
<b><i>Literacy</i></b>	Drawing a reflex arc	3 2 1 0

TOTAL PART 1 ..... / 30

TOTAL PART 2 ..... / 20

**FEEDBACK from Teacher:**

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Completion of assessment during allocated class time.     Excellent    Moderate    Limited

<b>Teacher Signature</b>		<b>Mark /50</b>	
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# DAVID'S DIABETES DILEMMA

David's father was hospitalised recently due to complications caused by his Type II diabetes. David was concerned that he may suffer similar health problems as he gets older. He decided to research the disease, the risk factors and management options so that he could minimise his chances of having similar health problems in the future.

*David has seen his father inject himself with insulin before meals. He started his research by looking up the role of insulin in the body.*

1. Classify insulin as being one of the following 1
- Steroid
  - Fatty acid
  - Protein
  - Carbohydrate

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2. Describe the structure of insulin 2

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3. Identify the site of insulin production in humans 2

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4. Describe the function of insulin in the body. Include a diagram of a negative feedback system to help illustrate your answer. 3

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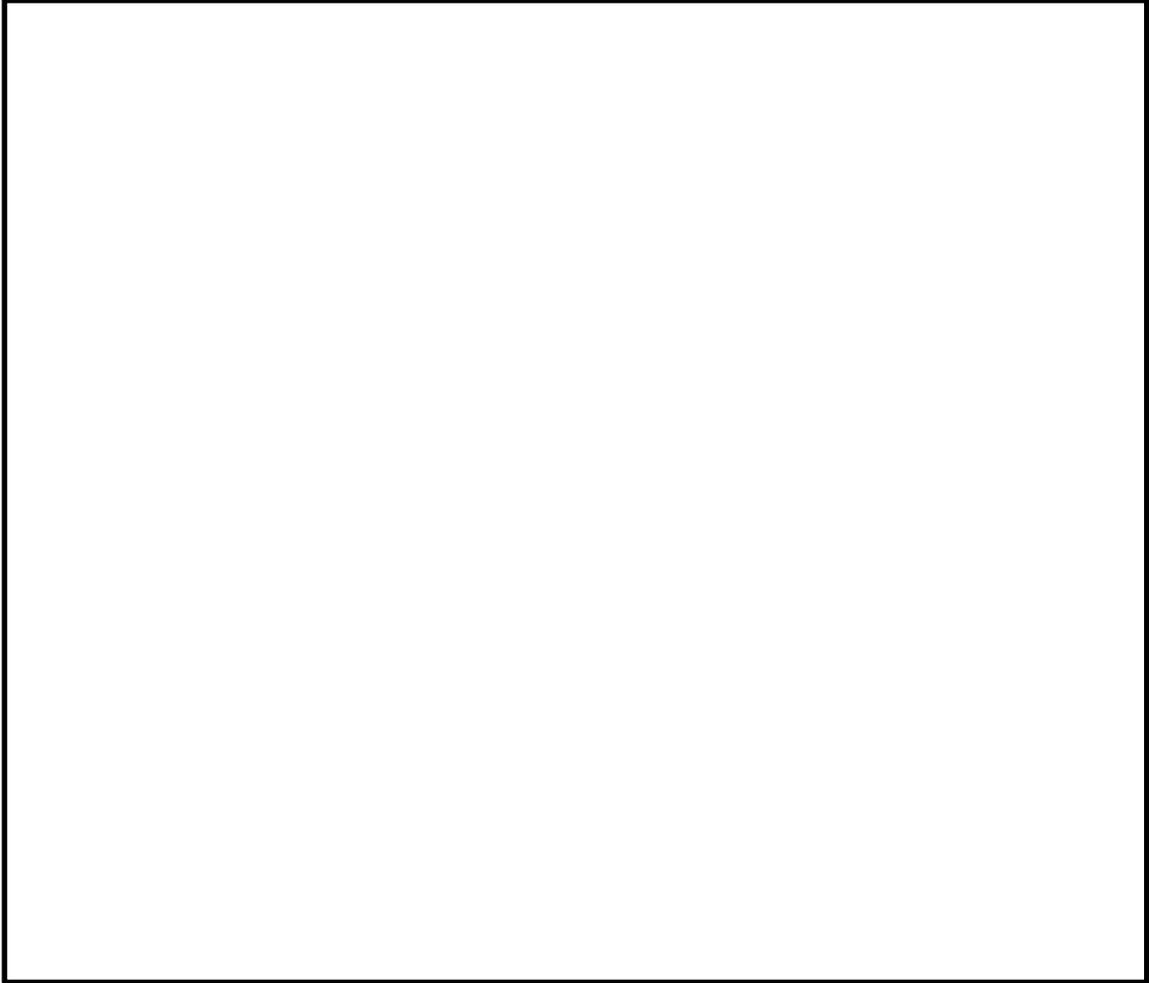
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5. Explain what is meant by the term “insulin resistance”

2

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*David's research on insulin has led him to believe that insulin resistance is the cause of his father's diabetes. He wanted to conduct further research to determine if his own behaviour can modify his chances of also being diagnosed with Type II diabetes.*

6. Is Type II diabetes classified as an infectious or non-infectious disease? Explain why. 2

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7. List two modifiable (can be controlled by a person's lifestyle) risk factors for Type II diabetes. 2

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8. Explain why one of the above risk factors increases a person's chance of being diagnosed with Type II diabetes 3

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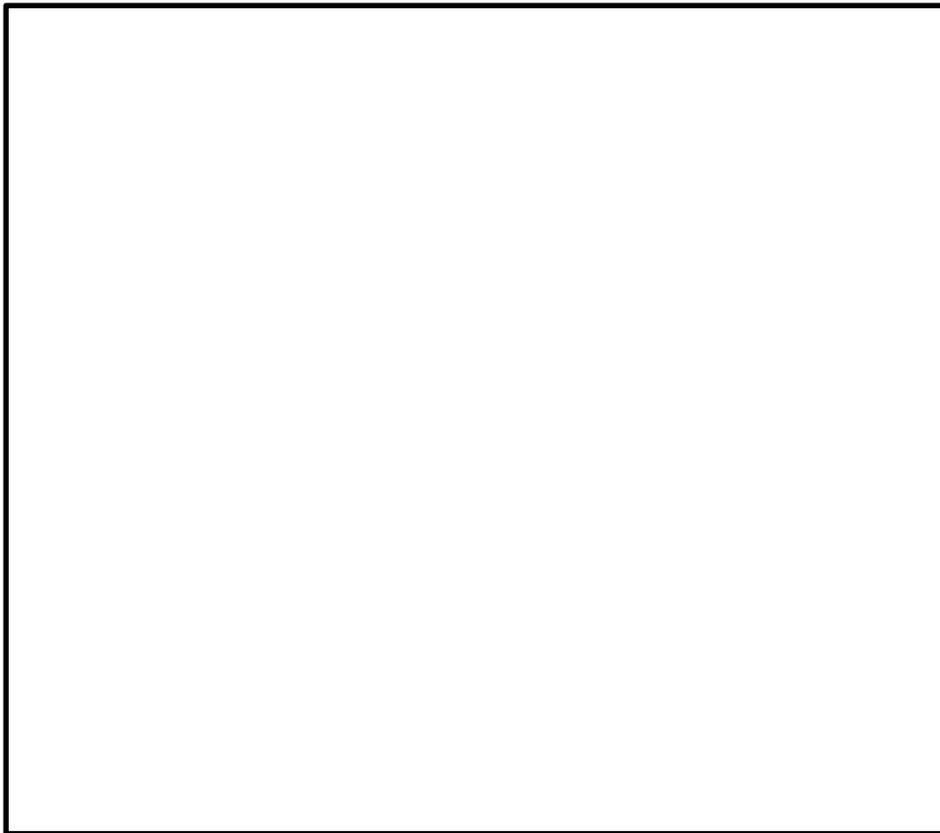
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9. Research recent biotechnology advances that have been introduced to manage Type II diabetes. In your answer include the following:

- Name one piece of equipment currently used to manage Type II diabetes. 1

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- Provide a picture of this piece of equipment 1



- Describe how the piece of equipment functions 3

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- What are the practical benefits of using this piece of equipment

2

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- Make a judgement about the usefulness of using this piece of equipment

1

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