**YEAR 10 SKILLS PRACTICE QUESTIONS**

# A Glossary of Key Words

This glossary contains key words that appear frequently in Board of Studies syllabuses, performance descriptions and examinations.

The purpose behind the glossary is to help students prepare better exams by showing them that certain key words are used similarly in examination questions across the different subjects they are studying.

When a key words appears in questions, tasks and marking schemes, it is helpful for the student to ask herself what the use of the term in a particular question requires students to do.

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| Analyse  | Identify components and the relationship between them; draw out and relate implications.  |
| **Assess**  | Make a judgement of value, quality, outcomes, results or size |
| **Calculate**  | Ascertain/determine from given facts, figures or information  |
| **Classify**  | Arrange or include in classes/categories  |
| **Compare** | Show how things are similar or different  |
| Construct | Make; build; put together items or arguments  |
| **Contrast** | Show how things are different or opposite  |
| **Define** | State meaning and identify essential qualities  |
| Describe  | Provide characteristics and features |
| **Discuss** | Identify issues and provide points for and/or against  |
| Distinguish  | Recognise or note/indicate as being distinct or different from; to note differences between  |
| **Evaluate** | Make a judgement based on criteria; determine the value of |
| Explain  | Relate cause and effect; make the relationships between things evident; provide why and/or how  |
| Identify  | Recognise and name  |
| **Investigate**  | Plan, inquire into and draw conclusions about  |
| Justify  | Support an argument or conclusion  |
| **Outline**  | Sketch in general terms; indicate the main features of  |
| **Predict** | Suggest what may happen based on available information  |
| **Recall**  | Present remembered ideas, facts or experiences |
| **Summarise** | Express, concisely, the relevant details  |

**THESE FOLLOWING TERMS ARE USEFUL IN ANALYSING PRACTICAL WORK and applying scientific method**

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| **accuracy** | Accuracy takes into consideration the possible sources of error and the limitations of the instruments used in making the measurements |
| **control (the control in an experiment)** | The sample in an experiment to which all the other samples are compared. |
| **data** | Facts or figures that can be used to draw conclusions. |
| **dependent** **variable** | The factor in the experiment that changes as a result of changes to the independent variable; conventionally plotted on the vertical (*y*) axis of a graph. |
| **design**  | Provide the steps for an experiment, procedure or investigation. |
| **draw conclusions**  | Deduce: to arrive at an opinion or judgment based on evidence. |
| **first-hand investigation** | Inquiry based on the direct use of observation or measurement. |
| **hypothesis** | A predictive statement which can be tested using a range of methods: most often associated with experimental procedure. |
| **independent variable** | The variable that is deliberately changed, often through a series of preset values. Conventionally plotted on the horizontal (*x*) axis of a graph. |
| **investigation** | Systematic inquiry. |
| **qualitatively** **account for** | To use descriptive explanations involving features, characteristics, properties to identify important components. |
| **quantitative**  | Involving measured components (chemical formulae or numbers). |
| **relate** | To identify connections or associations between ideas and/or relationships between components of systems and structures. |
| **reliability of first-hand data** | The degree with which repeated observation and/or measurements taken under identical circumstances will yield the same results. |
| **research**  | Investigate through the literature or by practical investigations, relevant information. |
| **scientific investigation** | A systematic inquiry carried out using scientific methods or inquiring into the knowledge and understanding of science. |
| **secondary sources** | A range of forms of information and data that have resulted from the investigations of other people, including graphs, diagrams and images. |
| **validity of first-hand data** | The extent to which the processes and resultant data measure what was intended. |
| **variable held constant** | Factors that may vary, but for the purposes of an experiment are deliberately held constant so that a valid conclusion is possible. |

1. The graphs below display the relationship between the number of grams of cereal and the number of calories for two types of cereal.

        

If Jackie and Rick each have 20 grams of cereal for breakfast, but Jackie has Sweet and Fruity Cereal and Rick has Healthy Bran Cereal, how many more calories is Jackie consuming compared to Rick?

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**Question 2**

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| **Amount of ethylene in mL/m2** | **Wine sap Apples:Days to Maturity** | **Golden Apples:Days to Maturity** | **Gala Apples:Days to Maturity** |
| **10** | **14** | **14** | **15** |
| **15** | **12** | **12** | **13** |
| **20** | **11** | **9** | **10** |
| **25** | **10** | **7** | **9** |
| **30** | **8** | **7** | **8** |
| **35** | **8** | **7** | **7** |

Ethylene is a plant hormone that causes fruit to mature. The data above concerns the amount of time it takes for fruit to mature from the time of the first application of ethylene by spraying a field of trees.

1. What is the dependent variable? ……………………………….
2. What is the independent variable? ………………………………

**Question 3**

The following paragraph was published in the *Daily Telegraph on October 26th 2010 in the Cl@ssmate series 10 article, page 26.*

“ Seahorses are one of the strangest creatures in the ocean. Moving through the water as if they are standing upright they look like swimming chess pieces rather than normal fish. Like their cousins the sea dragons, they often rely on keeping still and looking like floating pieces of plant matter in the ocean. As a result humans can often overlook them in the wild. But when they have been spotted these delicate and mostly tiny creatures have inspired myths about aquatic humans riding them beneath the sea, Today seahorses still thrive in many places although thee are various threats to some populations.”

By comparing this with the previous article, how can you tell that it is NOT a piece of scientific writing. Identify how you can tell this.

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**Question 4**

Three different plastics are tested to find out which plastic best stops the hot

casserole dish from burning the tables. The experiment was set up as shown

in the diagram below.

Casserole dish

electronic thermometer

 plastic tested

 table

* 1. What is the independent variable? (1)
	2. What is the dependent variable? (1)
	3. Name two things that would have to be controlled. (2)

**Question 5**. **.** Laboratory investigation reports generally begin with a hypothesis, question or aim. Which of the following should also be included in investigation reports?

* 1. Risk assessment, video, experimental procedure
	2. Experimental procedure, results, conclusion
	3. Weather conditions, graphs, hypothesis
	4. Experimental procedure, risk assessment, photos

**Question 6**

[**http://www.google.com.au/imgres?imgurl=http://www.sciencephoto.com/images/download\_wm\_image.html/C0051983-Indian\_Corn\_color\_variation,\_transposons-SPL.jpg%3Fid%3D670051983&imgrefurl=http://www.sciencephoto.com/images/download\_lo\_res.html%3Fid%3D670051983&usg=\_\_0AMnix2E1OvAN0ASUgsM7KCriyk=&h=352&w=530&sz=52&hl=en&start=28&zoom=1&tbnid=nHp50sgQ-tLWaM:&tbnh=151&tbnw=208&ei=rt\_ATbzZEs7WiAKb9umlAw&prev=/search%3Fq%3Dgenetic%2Bvariation%2Bin%2Bcorn%26um%3D1%26hl%3Den%26sa%3DN%26rlz%3D1T4SUNC\_enAU364AU365%26biw%3D1656%26bih%3D795%26tbm%3Disch0%2C511&um=1&itbs=1&iact=hc&vpx=237&vpy=454&dur=16&hovh=183&hovw=276&tx=221&ty=151&page=2&ndsp=32&ved=1t:429,r:9,s:28&biw=1656&bih=795**](http://www.google.com.au/imgres?imgurl=http://www.sciencephoto.com/images/download_wm_image.html/C0051983-Indian_Corn_color_variation,_transposons-SPL.jpg%3Fid%3D670051983&imgrefurl=http://www.sciencephoto.com/images/download_lo_res.html%3Fid%3D670051983&usg=__0AMnix2E1OvAN0ASUgsM7KCriyk=&h=352&w=530&sz=52&hl=en&start=28&zoom=1&tbnid=nHp50sgQ-tLWaM:&tbnh=151&tbnw=208&ei=rt_ATbzZEs7WiAKb9umlAw&prev=/search%3Fq%3Dgenetic%2Bvariation%2Bin%2Bcorn%26um%3D1%26hl%3Den%26sa%3DN%26rlz%3D1T4SUNC_enAU364AU365%26biw%3D1656%26bih%3D795%26tbm%3Disch0%2C511&um=1&itbs=1&iact=hc&vpx=237&vpy=454&dur=16&hovh=183&hovw=276&tx=221&ty=151&page=2&ndsp=32&ved=1t:429,r:9,s:28&biw=1656&bih=795) **3/05/2011**

Look at the photograph of the corn kernels.

State 2 ways that they are the same.

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State 2 ways they are different from each other.

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Planning an experiment:

 Melanie’s mother has decided to put mulch on the garden to try to reduce the amount of water they use on the garden. Melanie decides she will do an investigation to work out which sort of mulch would be the best to use.

Plan the experiment Melanie would need to do

STEP.1 What types of mulch could she test?

Step 2: What factors would she need to keep the same? Identify as many as you can.

Step 3: What risks might she face and how could she minimise these?

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Step 4: What is a possible hypothesis?

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Step 5: How can she make her experiment reliable?

Step 6: How can she make sure her experiment is valid?

What is the independent variable? ……………………………………………………..

What is the dependent variable? --------------------------------------------------------------

What has been controlled?............................................................................................

Write a procedure for this experiment.