Unit Standard 9012

Formative assessment 1 SO1 All assessment criteria

#### Group activity

1. Decide on a topic that you want to do research on. The topic has to relate to your place of work. Write down the aim of the research.

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1. Determine the population group that you will target for your survey. Then determine the size of the sample as well as the market segment.

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1. Decide how you will collect the information for your research project and who will do it.

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1. Draw up a list of at least six questions for your questionnaire

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1. Analyse your questions:

query each of your own questions by asking:

* To what extent might this question influence respondents to show themselves in a good light?
* To what extent might this question influence respondents to be unduly helpful by attempting to anticipate what researchers want to hear or find out?
* To what extent might this question be asking for information about respondents that they are not certain, and perhaps not likely, to know about themselves?

Note the results of this analysis

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1. Did you make use of any of the following that could cause a problem for the person completing the question?

If yes, change the question

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| Problem question | Y/N |
| Double-barrelled questions |  |
| Loaded language |  |
| Incorrect grammar |  |
| Incompleteness |  |
| Vagueness |  |
| Ambiguous terms |  |
| Lengthy items |  |
| Complex questions |  |
| Averaging or restrictive questions |  |
| Leading questions |  |
| Abbreviations |  |
| Imprecise questions |  |
| Misspelling |  |
| Awkward construction |  |
| Items with only one logical answer |  |
| Presumptive questions |  |
| Elevated vocabulary |  |
| Imprecise agents of action |  |
| False bipolar |  |

1. Which of the following questions types did you use in your questionnaire?

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| Question type | Yes/No | List the question |
| Open-ended questionsQuestions to which people respond in their own words |  |  |
| Closed-ended questionsQuestions to which people respond in fixed categories of answers |  |  |
| Paired-comparison questionsQuestions that ask respondents to make a judgment between alternatives taken two at a time |  |  |
| Contingency questionsQuestions asked only of some respondents, determined by their responses to some other question. |  |  |
| Ranking questionsClosed-ended questions that ask respondents to rank a set of options |  |  |
| Inventory QuestionsClosed-ended questions that ask respondents to list all responses that apply to them |  |  |
| Matrix questionsClosed-ended questions that ask respondents to use the same categories to supply information |  |  |
| Multiple-choice questionsClosed-ended questions that ask respondents to select a category response from a range of possible responses |  |  |

1. Use the other groups in the class as samples for your pilot survey. They must answer the questions drawn up in exercise 5 for your group.

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1. Look at the replies you received from the pilot survey. Is there anything you would change on the questionnaire? Make the changes to your questionnaire and indicate the changes below.

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For the same topic, develop a questionnaire of 5 questions that is a dichotomous questionnaire

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For the same topic, develop a questionnaire of 5 questions that is a Likert scale questionnaire

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For the same topic, develop a questionnaire of 5 questions that contain discrete variables

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Evaluate your questionnaires in order to determine whether they are valid measures of the

concepts or opinions being sought. ‘Validity’ is the degree to which a measure actually measures what it claims to measure.

Evaluate your questionnaire for validity using any of the methods in the learner guide.

Note the process and your results.

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Give the last 3 questionnaires to the next group to evaluate for validity. They must note the process and their results.

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#### Individual questionnaire

* Situations or issues that can be dealt with through statistical methods are identified correctly
* Variables contributing to a problem situation are identified and addressed in data gathering
* Appropriate and efficient methods are used to collect, record and organise data
* Data samples are of adequate size and are representative of the population
1. Give one example of an issue that you are interested in that can be dealt with through using statistics.

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1. Give one example of a database that you can access to get information

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1. One of the steps in gathering data is called sampling. Explain this concept

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1. Explain the following definitions that statisticians use when dealing with samples:
	1. A ‘population’

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* 1. A ‘unit’

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* 1. A ‘sample’

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* 1. A ‘sampling frame’

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* 1. A ‘variable’

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1. Explain the following terms
	1. ‘Bias’

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* 1. ‘Lack of precision’

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1. Give 2 disadvantages of simple random sampling (SRS)

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1. Give 2 advantages of Systematic Sampling

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1. Explain what is meant by Convenience sampling

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1. Explain what is meant by quota sampling

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1. Explain sampling distribution

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1. Name and explain two errors that can affect the results of your research

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1. How do sampling errors occur?

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1. What is the biggest problem when you are dealing with non-sampling errors?

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1. What is a continuous variable?

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1. What is a discrete variable?

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1. What is a dichotomous variable?

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1. Explain the “polarity rotation of items” method of control

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1. List the steps in the basic process of conducting a market survey

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Formative assessment SO2 All assessment criteria

1. In a group, analyse the responses to the questions that you received from the other group during your pilot survey. Write down your conclusions.

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1. Study the chart on the next page and answer the questions below:

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| How many ice creams were sold during January? |  |
| During which month were the most ice creams sold? |  |
| In which month were 70 ice creams sold? |  |
| What was the total number of ice creams sold for the period? |  |
| What is the range of the data set? |  |

Ice Cream Chart 1



Ice Cream Chart 2



1. The example above is a line chart indicating how many ice creams were sold from January to May. Study the column chart and answer the questions below

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| What tendencies do you pick up from this graph? |  |
| When would be a good time to start a new ice cream business? |  |

1. Study the chart on the next page and answer the questions below:

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| Which company sold most cars? |  |
| Which company sold the smallest percentage of cars? |  |
| How many cars did Chevrolet sell during 1996? |  |
| What is the range of the data set? |  |



1. In a group draw a column chart or a bar chart for the following information. Use the grid below to help you.

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| Why do you use a taxi to and from work | Cheap | 1631 |
| Fast | 1091 |
| Safe | 312 |
| Convenient | 1849 |

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| 2000 |  |  |  |  |
| 1800 |  |  |  |  |
| 1600 |  |  |  |  |
| 1400 |  |  |  |  |
| 1200 |  |  |  |  |
| 1000 |  |  |  |  |
| 800 |  |  |  |  |
| 600 |  |  |  |  |
| 400 |  |  |  |  |
| 200 |  |  |  |  |
|  | Cheap | Fast | Safe | Conve-nient |

1. In a group, draw a pie chart for the following information. A total of 2000 replies were received. Use the pie below to help you.

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| Which taxi route do you use every day? | Route A | 755 |
| Route B | 830 |
| Route C | 415 |

1. In a group, display the information you collected during the survey that was conducted in the class in the form of a chart.



1. In a group, refer to the correlation plot on and discuss the following statement, noting your conclusions:

What conclusions do you come to regarding the relationship between the occurrence of HIV AIDS and access to primary health care?

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Formative assessment SO3

#### Individual activity

1. Make a list of all the possible outcomes if two coins A and B are tossed.

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| If two coins are tossed 50 times, how many times do you expect to get two heads? |  |
| If two coins are tossed 50 times, how many times do you expect to get one tail and one head? |  |

1. Make a list of all possible outcomes if two dices X and Y are rolled simultaneously.

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| Make a list of the different outcomes of which the total is 6. |  |
| What is the probability that, if two dice are rolled simultaneously, the total is 6? |  |

1. For each situation, use a tree diagram to find the total number of outcomes and then calculate the probability of a specific outcome
	1. choosing white or rye bread with either ham, turkey, or salami
	2. going in-line skating or biking to either the library, grocery store, or the mall
	3. buying a sweater or a shirt in either orange, blue, turquoise, or red

HINT: Each of the two objects in the first set goes with each of the objects in the second set.

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1. An urn contains four blue balls and five red balls. What is the probability that a ball chosen from the urn is blue? Also record the answer as a percentage
2. Change the probability of an event happening 2/8 to a percentage

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1. Give the definition of probability

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Explain mutually exclusive events

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Explain independent events

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