### JAG03 Unit 2

**Task 1 The scientific method**

**a) The scientific method is a process in which experimental observations are used to answer questions. Complete the collocations for describing the stages in the scientific method using the words and phrases in the list below.**

***a hypothesis an experiment (x2) conclusions data (x3) the question***

Analyse \_\_\_\_\_

Collect \_\_\_\_\_

Conduct (run) \_\_\_\_\_

Define \_\_\_\_\_\_\_\_\_

Design \_\_\_\_\_\_\_

Draw \_\_\_\_\_\_

Interpret \_\_\_\_\_\_\_

Formulate \_\_\_\_\_\_\_\_

**b) Number the stages above in the order you would normally do them.**

**c) Read this extract and check your answers to b.**

Most scientists are motivated by a basic curiosity about how things work. Geologists are excited by the thrill of *discovering* something previously unknown about how the world works. These discoveries drive them to continue their work. Given that we know little about internal and external processes that form and maintain our world, how do we go about *studying* it? The creativity and insight that may result in scientific breakthroughs often begin with asking questions pertinent to a problem of interest to the *investigators*. If little is known about the topic or process being studied, they will first try to conceptually understand what is going on by making careful observations in the field or, perhaps, in a laboratory. On the basis of his or her observations, a scientist may then develop a question or a series of questions about those observations. Next, the investigator will suggest an answer or several possible answers to the question. The possible answer is a hypothesis to be tested. A hypothesis can be tested by designing an experiment that involves data collection, organisation and analysis. After collection and analysis of the data, the scientist interprets the data and draws a conclusion. The conclusion is then compared with the hypothesis, and the hypothesis may be rejected or tentatively accepted. If all hypotheses suggested to answer a particular question are rejected, then new hypotheses are developed and tested.

**d) Read the extract again to find the nouns of the verbs below. Which word/s use/s the same form for the verb and the noun?**

*analyse – collect – design – observe – discover – investigate*

**e) Can you think of synonyms to the words in italics?**

### f) Watch a video on the scientific method.

The Scientific Method: Steps, Terms and Examples

(https://www.youtube.com/watch?v=BVfI1wat2y8)

### Is there only one scientific method?

### Watch again and find more collocations for the words *hypothesis* and *conclusion.*

**Task 2 Speaking: Academic vocabulary**

**Explain the difference between the sentences in each pair.**

1. Graig´s article supports Park´s theory. Graig´s article challenges Park´s theory.

2. Describe the new tax regulations. Discuss the new tax regulations.

3. Ruffalo provides new data. Ruffalo considers new data.

4. Johansson conducted four sets of experiments. Johansson examined four sets of experiments.

5. Lee established why such changes occur. Lee investigated why such changes occur.

6. Downey assumed that the data were reliable. Downey proved that the data were reliable.

(McCarthy, M.; O´Dell, F. *Academic Vocabulary In Use.* Cambridge University Press, 2008.)