

Answers to Exercise 2.2

Declarative vs. Procedural Knowledge1. *Creating a line graph to represent data*

This statement is procedural. There is a certain amount of declarative information required (students must be familiar with data sets and line graphs), but the emphasis is on the creation of a line graph that accurately reflects a set of data. The teacher is asking the student to *do* something.

2. *Describing the events that led to the Cold War*

This statement is declarative. Students are required to demonstrate knowledge of the Cold War. Again, a certain amount of procedural knowledge is required in that students must describe what they know, but the emphasis is clearly on knowledge of the Cold War and not on speaking or describing.

3. *Determining breathing rate and heart rate*

Given the way this statement is worded, it could be either procedural or declarative. If the emphasis is on information about breathing and heart rate (what rates are common in resting, normal, and active states, for example), the statement would be declarative. In that case, it might be reworded into something like the following: *Students will understand the common breathing and heart rates for resting, normal, and active states for people their own age.* If the focus is on the process of finding these rates, the statement would be procedural. In that case, it might be reworded to reflect a statement like the following: *Students will be able to find and calculate the breathing and heart rates for themselves and others.*

4. *Refusal skills*

This statement could be either declarative or procedural. If the focus is only on having an understanding of refusal skills and the situations in which they might be useful, the focus is on declarative information, and the statement can be reworded to read as follows: *Students will understand proper refusal skills and the academic and social situations in which they would be used.* If the teacher wants the students to put this knowledge to use, the focus would be primarily procedural. It could be reworded like this: *Students will be able to demonstrate proper refusal skills in appropriate academic and social situations.*

5. *Characteristics of chance events*

This statement is declarative. Students are required to understand the defining characteristics of a concept—chance events.

6. *Keyboarding techniques*

This statement could be either declarative or procedural. If the emphasis is on the physical process of keyboarding, it would be procedural knowledge; if the emphasis is on understanding the position of the keys, it would be declarative knowledge.

7. *Keeping in rhythm*

This statement is primarily procedural. It could be argued that if the emphasis is on understanding how to keep rhythm then it could be declarative as well, but most often people do not understand rhythm in an informational way. We understand rhythm by the process of keeping it.

8. *The relationship between the seasons and the tilt of the earth*

This statement is declarative. It requires an understanding of causal relationships.

9. *Survey sampling technique*

This statement could be either declarative or procedural. It is most likely that the intended focus is on the use of survey sampling techniques for a given purpose, and in that case, the statement would be procedural and could read something like: *Students will be able to use appropriate survey sampling techniques and report results.*

10. *Front-end rounding*

This statement could be either declarative or procedural. It is likely that the teacher would want students not only to have declarative knowledge of front-end rounding (how it is done and what its purpose is), but to be able to perform the process as well. If the teacher's aim is the former, the statement might read as follows: *Students will understand the purpose and steps in front-end rounding.* If the teacher's aim is the latter, the statement will read like this: *Students will be able to use front-end rounding.*