Strategies for Advanced Thinking

IFF 2

To help me determine cause-effect relationships.

This strategy has two parts, one to help determine the cause or causes of events and the other to determine the effect or effects of events. When analyzing cause and effect relationships, you need to think back and forth. If you are looking for a cause or causes of an event, you need to think back. If you are looking for the effect or effects for an event, you need to think forward. Both require you to start with an event and then reason backward and forward from the event.

The three steps in the first part of this strategy are the same as the last three steps. They differ in that the first three steps look at causation and the last three steps look at effects or results.

Identify an event.

- Clearly identify the event for which you want to find the cause or causes.
- Write this down so that you are clear about the starting point of your thinking process.

Find one cause.

- Some events have only one cause. Ask yourself if this event fits this category.
- Use self-talk or visual aids to clearly demonstrate to yourself the nature of the cause and effect relationship. One way to show causation is to write the event and then draw an arrow to the left of the event and write the cause. This will show that you are reasoning backward to find the cause of the event.
- For example, if you are studying the causes of avalanches and landslides, you will find that there is one cause; i.e. substances that overcome friction between the snow or rocks and the underlying ground that holds the snow or rocks in place on a slope. You might explain this to yourself by saying: "*Substances like water, ice, and sand overcome friction by making the underlying surface slippery and providing a cushion that snow or rock can move over. This movement is an avalanche or landslide."* You also might try to visualize in your mind's eye the actions that take place with an avalanche or landslide. You might picture rocks on a slope and water under the rocks carrying them downhill.

Find other causes.

- Some other events have more than one cause. Ask yourself if this event fits this category.

- Use self talk or visual aids to clearly demonstrate to yourself the nature of the cause and effect relationship. Think about why all the causes are necessary and why one or a few might not fully explain the event. One way to show multiple causation is to write the event and then to the left of this make a list of all the possible causes of the event. Draw an arrow from the event back to each of the causes listed. This will show that you are reasoning backwards to find multiple causes.
- For example, if you are studying the Salem witch trials, you may have learned that there are four major reasons for the trials: the Puritan life style, strong belief in the devil and witchcraft, the divisions within the Salem village, and expectations for children. You might explain this to yourself by saying: "*There are four reasons for the Salem witch trials. First the Puritan life style had a rigid moral code that made anyone who did not follow the code suspicious. Second, the people viewed the devil as equal to God and believed that witches were possessed by the devil. Third, there were strong economic and social differences between the people of Salem and the poorer people who were accused of witchcraft. And fourth, children were expected to behave as adults. The two girls who made the accusations of witchcraft were viewed as little adults."*

Identify an event.

- Clearly identify the event for which you want to find the effects.
- Write this down so that you are clear about the starting point of your thinking process.

Find one effect.

- Some events have only one effect. Ask yourself if this event fits this category.
- Use self talk or visual aids to clearly demonstrate to yourself the nature of the cause and effect relationship. One way to show effects is to write the event and then draw an arrow to the right of the event and write the effect. This will show that you are reasoning forward to project the effect of the event.
- For example, if you are studying the effects of drinking and driving, you find that alcohol affects the nervous system by slowing it down and this eventually results in decreased ability to drive. You might explain this to yourself by saying: "*The effect of alcohol on a person's ability to drive is to act like a sedative and slow down the nervous system."*

Find other effects.

- Some events have multiple effects. Ask yourself if this event fits into this category.
- Use self talk or visual aids to clearly demonstrate to yourself the nature of the cause and effect relationship. Think about why all the effects are likely and why one or a few might not be sufficient to explain the relationship. One way to show multiple

effects is to write the event and then to the right of this make a list of all the possible effects of the event. Draw an arrow from the event forward to each of the effects listed. This will show that you are reasoning forward to project multiple effects.

- For example, if you are studying the inner body effects of smoking, you may have learned that there are six effects: shortness of breath, coughing, dizziness, increased rate or cancer, increased rate of heart disease, and increase rate of lung problems. You might explain this to yourself by saying: "*There are six effects of smoking on the inner body. These are shortness of breath, coughing, dizziness, more cancer, more heart disease, and more lung problems.*