

## Pattern Recognition

Our senses provide the information that enables us to detect the presence of objects and then to distinguish different objects from each other. Each sense organ has the job of detecting the presence of a particular kind of energy (light, chemical, sound) and differentiating among different levels of that type of energy. We call the minimum amount of energy that the sense organ can detect the *detection threshold* or *absolute threshold*. The *difference threshold* or *just noticeable difference (jnd)* is the smallest change in energy that the sense organs can perceive; the amount of change needed to tell that two things are different. We use these abilities constantly as we perform our everyday tasks. There is also debate about how much we rely on information that is below our ability to detect. Energy that cannot be detected by a sense organ is called *subliminal* or *subthreshold*.

For each of the situations below, identify which of the following concepts is necessary to complete the task successfully: absolute threshold, difference threshold, or subthreshold. Then, think up your own examples from daily life to illustrate each concept.

1. A woman preparing for a trip to Mexico tries to learn Spanish using a "Learn While You Sleep" tape.
2. A guard on duty notices a very soft noise and calls out for the thief to "Halt!"
3. A father takes his children to the playground. During the visit, a child starts to cry. Without looking, the father can tell that it is not his child's cry.
4. There is a sale on 5-pound prepackaged bags of potatoes. In order to make sure you get the most for your money, you pick up several bags to see which is the heaviest.
5. You help your friend look for her contact lens on her white kitchen floor.
6. A music group records the phrase "Buy our CD" backwards in one of their songs.
7. It is late at night and you are trying to go to bed without waking your roommate. You want to find your favorite pajamas without turning on the light. After carefully and quietly opening your dresser drawer, you reach in and try to pick it out from all the items in the drawer.
8. You are one of the judges in a chili-tasting contest and are trying to select the winner of the "Hottest Chili" award.
9. In that same chili-tasting contest, you are asked to try to identify which of ten chili samples contains cinnamon.

### Your Examples:

Absolute Threshold:

Difference Threshold:

Subthreshold: