Worksheet

Lesson 2 - Probability

Warm up

The following situations are described below:

- Go out to the schoolyard and measure the noise level at school.
- Record waiting time at school snack bar.
- Go out to the schoolyard and count the number of people in it.
- Record how long it takes for the schoolyard to clear out after recess.

Which of these situations are random? Why?

Activity 1

In pairs, consider the following situations with three possible associated observations and answer the questions.

	Possible observations		
Random Situation	**Observation 1**	**Observation 2**	**Observation 3**
Measure the noise level at school	Noise level is very loud during recess.	Noise level is null during recess.	Noise level is louder during recess than during class.
Record waiting time at school snack bar	Waiting time is less than a couple of minutes.	Waiting time is more than an hour.	Waiting time is longer during recess than during class.
Counting the number of people in the schoolyard	There's no one in the schoolyard during recess.	A few people are there during PE class.	The schoolyard is more crowded during recess than during class.
Recording how long it takes for the schoolyard to clear out after recess	The schoolyard is empty right after the bell rings.	The schoolyard takes less than 5 minutes to empty.	The schoolyard takes less than half an hour to empty.

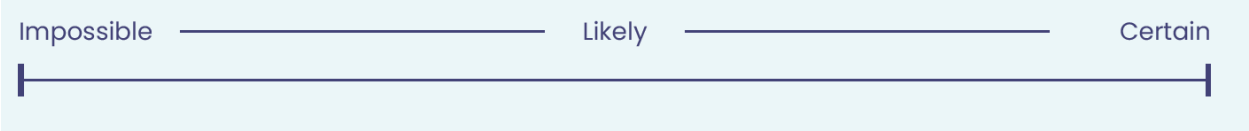
1. For each situation:
    a. How likely do you think each observation is?
    b. Would you say that some observations are more likely than others?

Activity 2

1. In groups, classify the following observations according to their level of likelihood as "Impossible," "Likely," or "Certain".

    a. It will be cloudy tomorrow morning.
    b. It rains in Puerto Montt on a winter day.
    c. Toast with jam falls jam-side down.
    d. A cat lands on its feet.
    e. I won't tell anyone the gossip I just heard.
    f. The sun rises in the morning.
    g. The moon falls to Earth.
    h. A rainbow appears in the sky after the rain.
    i. I win five rounds of rock-paper-scissors in a row.
    j. Chile qualifies for the next men's World Cup.
    k. Alexis Sánchez wins an Olympic medal in archery.
    l. I'll get an A on the next math test.

2. Place the previous observations on the diagram below.



Note: The closer an observation is to "Certain," the more likely it is to happen. On the other hand, the closer it is to "Impossible," the less likely it is to happen.

3. Compare the diagrams from each group and reflect on the following questions:
    a. Are there differences in the level of likelihood assigned to each observation?
    b. Why do you think this happens?

Activity 3

In groups, imagine the following situation:

When you arrive at a birthday party, you receive a surprise candy bag. The birthday girl put them together in a bit of a hurry, so the bags are quite different from one another. When you receive your bag, you must take out one candy at random (without looking) and observe its color.

a) For each of the following bags, indicate how likely it is that the candy you draw **will be red**. Justify your answer in each case.

b) How does chance play a role in this situation?

c) Among the situations you classified as “Likely,” which one has a higher level of likelihood? Justify your answer.