

Concept: Introduction to Probability

Name: _____

COMPUTER COMPONENT

Instructions: In  follow the **Content Menu** path:

Probability > Introduction to Probability

 Work through all Sub Lessons of the following Lessons **in order**:

- *The Language of Chance*
- *Impossible to Certain*
- *Probability Lines*
- *Possible Outcomes*
- *Experiments with Spinners*
- *The Spinner Game*
- *It's in the Bag*
- *Tree Diagrams*
- *Problem Solving- Logic vs. Probability*



As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

SUMMARY

1. Before we learn about the **probability** of something happening, we must determine what is **probability**.

What are the possible outcomes when you toss a coin? **Heads, Tails.**

The 'Set' of possible outcomes is called **sample space**.

2. An optometrist gives you an eye examination sheet. 'Check' the possible ways you can answer her questions.

1. T <input type="checkbox"/> F <input type="checkbox"/>	1. T <input type="checkbox"/> F <input type="checkbox"/>	1. T <input type="checkbox"/> F <input type="checkbox"/>	1. T <input type="checkbox"/> F <input type="checkbox"/>
2. T <input type="checkbox"/> F <input type="checkbox"/>	2. T <input type="checkbox"/> F <input type="checkbox"/>	2. T <input type="checkbox"/> F <input type="checkbox"/>	2. T <input type="checkbox"/> F <input type="checkbox"/>

List the possibilities: **True True, True False, False True, False False.**

3. A tourist wishes to travel from Kauai to Lanai to Maui to Hawaii. List all the possible ways he can do this.

P B P	P B B
P B H	B B P
B B B	B B H

4. *Spinners have always been an excellent tool to illustrate chance.*

Use the space below to record your ‘predictions and results’ for the 6 experiments in the ‘Experiments with Spinners’ Lesson.

Experiment 1

When I spin Spinner A 20 times, I PREDICT that I will spin RED **5** time(s).

When I spin Spinner B 20 times, I PREDICT that I will spin RED **10** time(s).

Tally Chart – Spinner A

Red	
Blue	
Green	
Yellow	

* Results will vary.

Tally Chart- Spinner B

Red	
Green	

* Results will vary.

Compare your predictions with the actual results. Are the numbers similar or different? Why?

Responses will vary, but the key is to realize that there are distinct differences between theoretical probability and experimental probability.

Experiment 2

When I spin Spinner C 18 times, I PREDICT that I will spin RED **6** time(s).

Tally Chart – Spinner C

Red	
Blue	
Green	

Compare your prediction with the actual result. Are the numbers similar or different? Why?

Red came up $\frac{\quad}{18}$ of the time. * **Results will vary.**

Again, responses will vary, but the key is to realize that there are distinct differences between theoretical probability and experimental probability.

Experiment 3

When I spin Spinner D 20 times, I PREDICT that I will spin C **4** time(s).

Tally Chart – Spinner D

A	
B	
C	
D	
E	

Compare your prediction with the actual result. Are the numbers similar or different? Why?

C came up $\frac{\quad}{20}$ of the time. * **Results will vary.**

Again, responses will vary, but the key is to realize that there are distinct differences between theoretical probability and experimental probability.

Experiment 4

When I spin Spinner E 20 times, I PREDICT that I will spin an EVEN NUMBER **10** time(s).

Tally Chart – Spinner E

Even	
Odd	

Compare your prediction with the actual result. Are the numbers similar or different? Why?

Even came up $\frac{\quad}{20}$ of the time. * **Results will vary.**

Again, responses will vary, but the key is to realize that there are distinct differences between theoretical probability and experimental probability.

Experiment 5

When I spin Spinner F 20 times, I PREDICT that I will spin RED **10** time(s) and GREEN **5** time(s).

Tally Chart – Spinner F

Red	
Blue	
Green	

Compare your prediction with the actual result. Are the numbers similar or different? Why? * **Results will vary.**

Red came up $\frac{\quad}{20}$ of the time. Green came up $\frac{\quad}{20}$ of the time

Experiment 6

When I spin Spinner G 24 times, I PREDICT that I will spin BLUE 9 time(s).

Tally Chart – Spinner G

Red	
Blue	
Yellow	

Compare your prediction with the actual result. Are the numbers similar or different? Why? * **Results will vary.**

Blue came up $\frac{\quad}{24}$ of the time.

OFF COMPUTER EXERCISES

1. Use the following terms to classify the probability of each event below.

Impossible Unlikely Possible
Likely Equally Likely Certain

- You will have a conversation with someone today.
Likely
- The sun will set tonight.
Certain
- You will flip “Heads” on a coin.
Equally Likely
- A cat will fly by itself.
Impossible
- You will watch a movie tonight.
Possible
- You will read a whole novel in 1 hour.
Unlikely

2. Describe probable events below.

(a) Describe 2 events that are certain to happen this week.

Responses will vary.

(b) Describe 2 events that would be impossible this week.

Responses will vary.

(c) Describe 2 events that could possibly happen this week.

Responses will vary.

3. Use the probability words you learned on the computer. Rank these events in order of their probability.

Certain (1) Today will end at midnight.

Likely (2) I will eat lunch today.

Possible (3) I will go to the movie theater this week.

Unlikely (4) My teacher will not teach the class on Tuesday.

Impossible (5) It will snow in Honolulu tomorrow.

4. I heard a game show host say that something had an “equally likely” chance of happening. What might he have been talking about?

Answers will vary.

Tree diagrams are an excellent way to record and count all combinations of events.

5. At a restaurant, you can choose from: 3 different drinks (Soda, Juice or Water) and 2 dinners (Hamburger, Spaghetti).

Make a tree diagram in the space below to list all possible meal combinations.

Hamburger	Soda
	Juice
	Water
Spaghetti	Soda
	Juice
	Water

*How many possible combinations are there? **There are 6 possible combinations.***

(b) A traditional triathlon is a 3-event race: swim, ride and run.

As today's race starts and finishes in the same place, organizers have proposed allowing participants to select the order they would like to tackle each event.

Make a tree diagram to list all the possible ways to race.

Swim	Run	Ride
	Ride	Run
Ride	Swim	Run
	Run	Swim
Run	Ride	Swim
	Swim	Ride

*How many possible combinations are there? **There are 6 possible combinations.***