Module 1.1

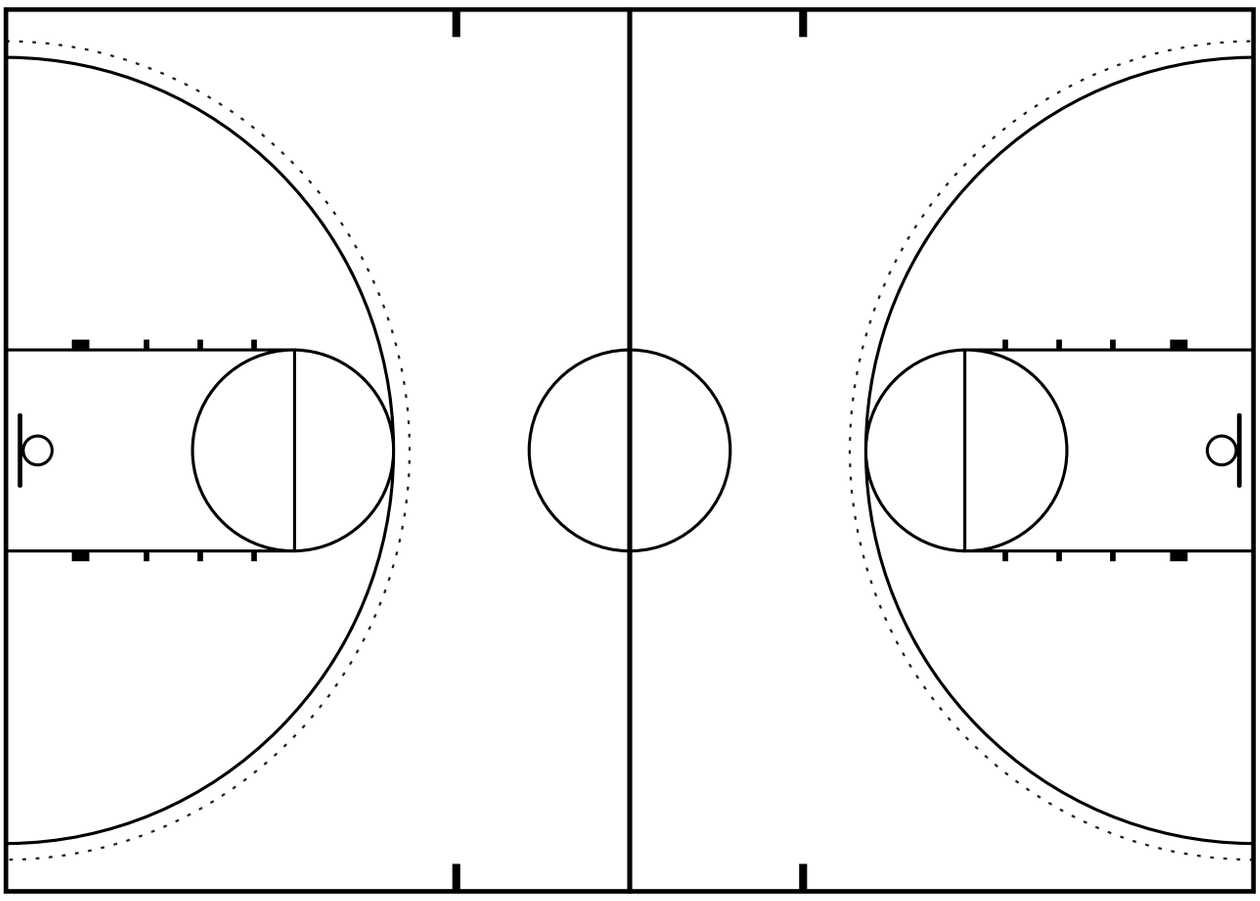
Name: _____

Basketball Measurements

GRADES 3-5

	Estimate	Measurement
Number of tiles in a basketball court		

Please see the below basketball court as a visual reference.



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Name: _____

Basketball Measurements

GRADES 3-5

	Measurement		Perimeter	Area
Endline to endline		**Full Court**		
Half court line		**Half Court**		
Endline to foul line		**Foul Box**		
Half court line to end line				
Foul Line				

NBA and College: 94 feet long and 50 feet wide

Perimeter:_____ Area:_____

High School: 84 feet long and 50 feet wide

Perimeter:_____ Area:_____

Junior High: 74 feet long and 42 feet wide

Perimeter:_____ Area:_____

Module 2.1

Name: _____

Gravity and Push Force

GRADES 3-5

Part 1

# of bounces	Trial 1	Trial 2	Trial 3
48 inches			
24 inches			

Part 2

# of bounces	Trial 1	Trial 2	Trial 3
48 inches Dropped			
48 inches Dribbled/Pushed			
24 inches Dropped			
24 inches Dribbled/Pushed			

Name: _____

Gravity and Push Force

GRADES 3-5

QUESTIONS:

1. Why does the motion of the ball change when you push on it vs. drop it?

_____

_____

_____

_____

2. How does gravity change the motion of a basketball if it is further away from the ground?

_____

_____

_____

_____

3. Predict what would happen if you dropped the basketball from 12 inches and 50 inches.

_____

_____

_____

_____

_____

Module 3.1

Name: _____

Understanding Basketball

GRADES 3-5

I wonder…..	I notice…..

Name: _____

Understanding Basketball

GRADES 3-5

Observation	Basketball	Golf Ball	Tennis Ball	Helium Balloon
Describe the ball				
Measure the ball				
Weigh the ball				

Module 4.1

Name: _____

Motion and Basketballs

GRADES 3-5

Measurements	Trial 1	Trial 2	Trial 3
Time of ball(s)			
Time of runner(s)			

Name: _____

Motion and Basketballs

GRADES 3-5

1. What was faster, the ball or the person? Use evidence from the experiment to support your answer.

_____

_____

_____

_____

_____

_____

_____

Module 5.1

Name: _____

Engineering Design Challenge

GRADES 3-5

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5
Location on model court					
Distance					
Observations					

Brainstorm ways to Increase the Motion in the Design

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Name: _____

Engineering Design Challenge

GRADES 3-5

Select a single Design (draw in detail, label materials and provide measurements)

Build and Re-Test

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5
Location on model court					
Distance					
Observations					

Was your redesign successful? Did it increase the motion of the marshmallow? _____

_____

Module 6.1

Name: _____

Calculating Calories

GRADES 3-5

Kids burn an average of 200 calories per hour of play.
How many 8 oz Coconut Waters do you need to drink? *(Please note: Label is 8 fl oz)*

_____

_____

CALCULATING CALORIES:

- **Step 1:** Convert your weight in pounds to kilograms by dividing by 2. Round to the nearest whole number, if needed.
- **Step 2:** Multiply the MET value by your weight in kilograms. Use the MET value of 7.0.
- **Step 3:** Multiply the product by the time you performed the activity in hours to get the number of calories you burned.
- **Equation:** (Weight/2) x 7 x number of hours.

Nutrition Facts

Real Coconut Water - From Taste Nirvana

8 fl oz (224.8g)

Servings Per Container 3

Amount Per Serving	
Calories 50	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 50mg	2%
Total Carbohydrates 13g	4%
Dietary Fiber 0g	0%
Sugars 10g	
Protein 0g	
Vitamin C	6%
Calcium	4%
Iron	2%

* Percent Daily Values are based on a 2000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

Name: _____

Calculating Calories

GRADES 3-5

Example: LeBron James: 250 ÷ 2 x 7 x .5 hours = 437.5 Calories Burned

1. How many calories did you burn for 15 minutes?

_____

_____

_____

_____

2. Using the equation, how many calories will you burn if you play for 30 minutes? 1 hour?

_____

_____

_____

_____

3. Bonus: How long would it take you to burn 450 calories?

_____

_____

_____

_____

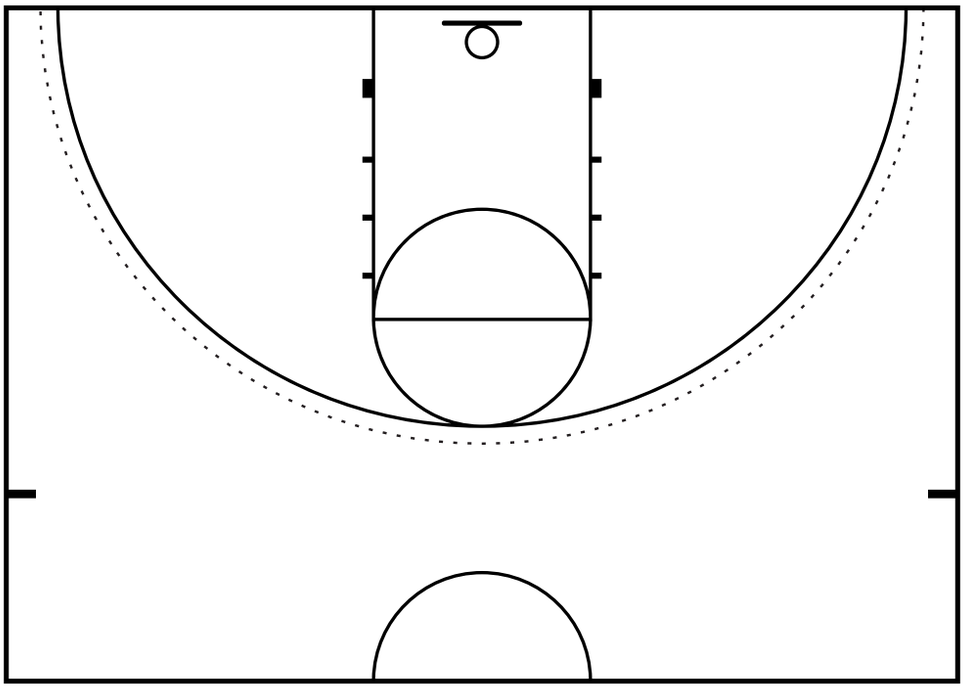
Module 7.2

Name: _____

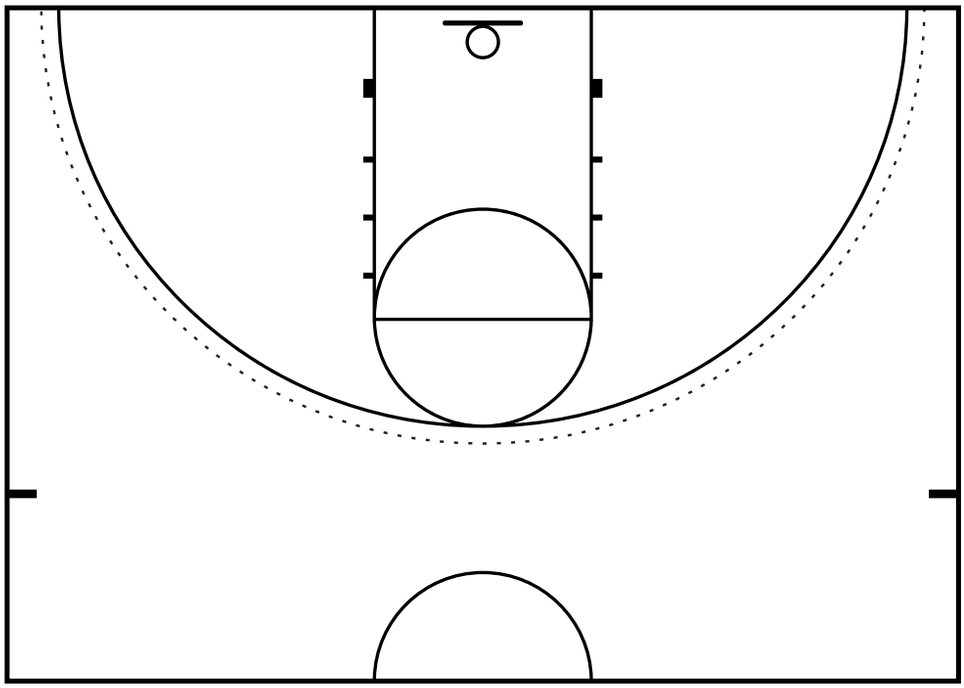
Shot Tracking

GRADES 3-5

O - Shots Made



X - Shots Missed



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Name: _____

Shot Tracking

GRADES 3-5

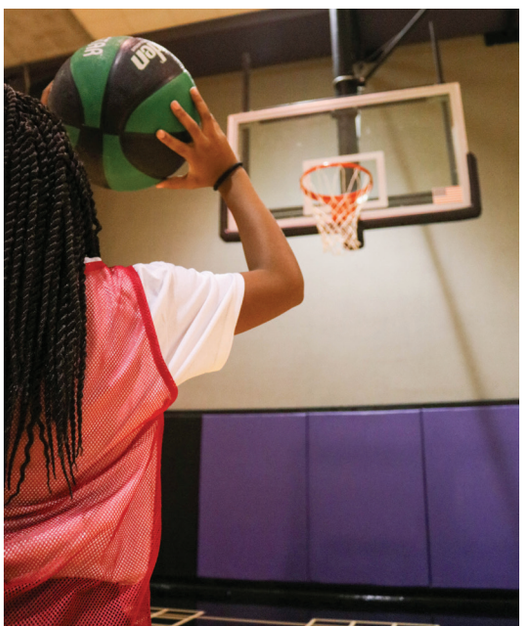
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL Made
Free Throws																
Lay-Ups																

Write a mathematical expression that states if your free throw accuracy is greater than or less than your layup accuracy. Justify it with evidence. _____

_____

_____

_____



Module 8.1

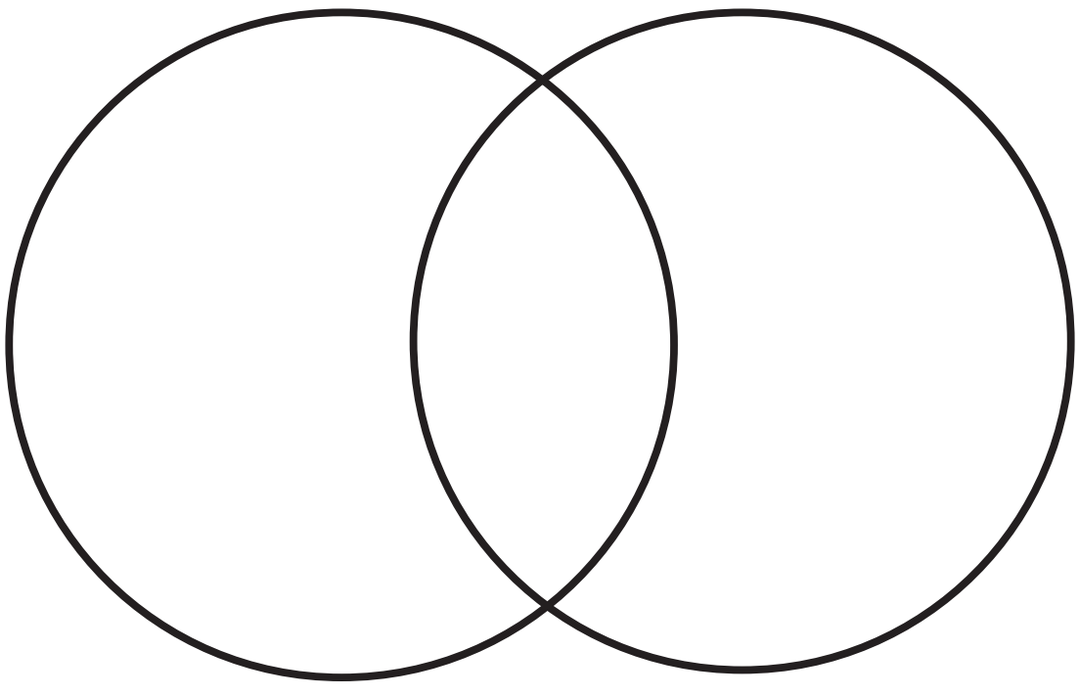
Name: _____

Advancements In Shoe Technology

GRADES 3-5

Diagram your shoe	Measurements of your shoe	Observations (texture, shape, color, etc)

What is the difference between an Inference and an Observation?



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Name: _____

Advancements In Shoe Technology

GRADES 3-5

Shoe	Observations with numbers	Observations with words	Inference about why there was a design change