

Name \_\_\_\_\_

Date \_\_\_\_\_

## Playground Games



### Game One - Soccer Velocity

#### Equipment –

1. One soccer ball
2. All the measuring tools you can find, even the ones that will not be used to measure velocity
3. Get the chair with the “Game #1 – Soccer Velocity” sign.
4. Place all measuring tools in the chair.
5. Carry the chair and soccer ball to the kickball (or softball) field on the playground.

#### Game Instructions –

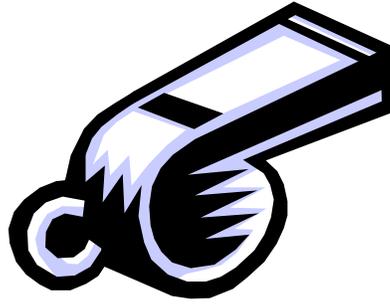
1. Make a mark at home plate. Make a mark at second base. Measure the distance between the two marks. Because students will not kick the ball straight to second base, prepare a range area by measuring that same distance from home plate to a mark between first and second base and to a mark between second and third base. You may use any unit of measure that you think is correct. There is more than one correct unit.
2. Select a timekeeper. The timekeeper selects a measurement tool to measure seconds.
3. When the timekeeper says, “Go,” the kicker kicks the ball. When it crosses the lines marked, the timer will tell the time to the kicker.
4. The kicker writes the time on this game sheet.
5. Repeat until all group members have had a turn to kick the ball to the marked line one time.
6. Figure the velocity of the ball you kicked.

My distance is \_\_\_\_\_. My time is \_\_\_\_\_.

$$V = d/t$$

My velocity is \_\_\_\_\_.

## Game Two – Whistle Waves



### Equipment –

1. Get the whistle and alcohol wipes.
2. Get the pitchers and fill them with water.
3. Get the chair with the “Game #2 – Whistle Waves” sign.
4. Carry the chair, whistle, wipes, and pitchers of water to the playground.
5. Find an area with a picnic table, a bench, or some other table to place the pitchers on.

### Game Instructions –

1. The object is to blow the whistle to make waves in the water in the pitcher.
2. Select one pitcher you think will let the most sound waves pass through the side of the pitcher.
3. So that the waves must pass through the pitcher, the whistle may not touch the pitcher and must be blown no higher than three inches from the bottom of the pitcher.
4. One team member observes the water and reports when a wave is seen, if the wave is strong enough to travel to the edge of the pitcher, and/or if the wave is strong enough to bounce off the edge of the pitcher.
5. Record the information on this sheet.
6. The person blowing the whistle is responsible for using a clean wipe to clean the whistle before passing it on to the next group member.
7. Repeat with all group members taking turns selecting a pitcher, blowing the whistle, and recording their wave information.

I selected the \_\_\_\_\_ pitcher because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### My sound waves

- \_\_\_\_\_ did not move through the pitcher to make waves in the water.
- \_\_\_\_\_ made small waves in the water.
- \_\_\_\_\_ made waves that traveled to the side of the pitcher.
- \_\_\_\_\_ made waves that bounced off the side of the pitcher.

## Game Three – Move It



### Equipment –

1. Get one measuring tool to measure distance.
2. Get the wheelbarrow, moving dolly, and skateboard.
3. Get the chair with the “Game #3 – Move It” sign.
4. Carry everything to track on the playground.

### Game Instructions –

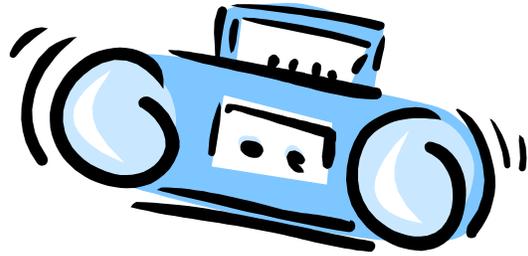
1. The object is to move the whole group from the beginning line to the ending line in as few trips as possible. Each time a person’s feet touch the track from the beginning mark to the ending mark, it counts as one trip. Only the person whose feet touch the track while moving counts as a trip. For instance, if one person carries another, only the person whose feet touch counts so two people could move and only count one trip.
2. Mark a beginning line. Measure 50 feet and mark the ending line.
3. Discuss the best way to move the entire group from the beginning line to the ending line in the fewest trips.
4. Move the group.
5. Remember that every time a person’s feet touch it counts as a trip. For instance, if one person carries another, but drops him/her part way down the track, it counts as two trips--one trip for the person walking and one trip for the person who was dropped.
6. Finish this form by writing the information below. If you used a simple machine, be sure to tell which simple machine was used and how it helped get the task done.

It took my group \_\_\_\_\_ trips to move the whole group from the beginning line to the end. This is how we did it. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Game Four – Kill the Waves



### Equipment –

1. Get the radio.
2. Get the large box.
3. Get the pile of packing materials and jackets and put them all in the box.
4. Get the chair with the “Game #4 – Kill the Waves” sign.
5. Carry everything to a grassy spot on the playground.

### Game Instructions –

1. Empty the box by dumping the materials on the grass.
2. Turn on the radio so the volume is half as loud as it will go.
3. Place the playing radio in the box.
4. The object is to select as few materials as possible to soundproof the box, that is, to stop the sound waves from passing through the box.
5. Discuss with the group which materials should be used.
6. Soundproof the box.
7. Complete this form by putting an X by the statement that matches your group. Then finish the sentences with information about what your group did.

\_\_\_\_\_ My group could not soundproof the box with the materials we had. We think we needed \_\_\_\_\_

to add to the box to soundproof it because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ My group could soundproof the box. This is how we did it. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This is why it worked. \_\_\_\_\_

\_\_\_\_\_

## Game Five – Sliding Velocity



### Equipment –

1. Get one tool for measuring distance and one tool for measuring time.
2. Get the chair with the “Game #5 – Sliding Velocity” sign.
3. Carry the chair to the slide on the playground.

### Game Instructions –

1. Measure the slide from the top line to the bottom edge where the slide ends.
2. Write the distance on this form.
3. Select one person to be the timekeeper.
4. The object is to have the slowest velocity going down the slide. Remember that velocity is a change in distance, so it is measuring movement. If movement stops before the slider reaches the end of the slide, that person’s turn is over with no velocity to record.
5. When the timekeeper says “Go”, the slider slides down the slide. When the slider’s falls or steps off the end of the slide, the timekeeper tells the time.
6. The slider writes the time on this form.
7. Each person gets three turns. Each turn is recorded on this form.
8. Calculate the velocity of each slide. Remember to write the unit labels.
9. When all group members are finished, discuss the velocities and why some were slower than others.

First Slide	Second Slide	Third Slide
Distance _____	Distance _____	Distance _____
Time _____	Time _____	Time _____
$v = d/t$	$v = d/t$	$v = d/t$
Velocity _____	Velocity _____	Velocity _____
_____ I did not finish my slide.	_____ I did not finish my slide.	_____ I did not finish my slide.

My slowest velocity was \_\_\_\_\_.