Physics Olympics
Activity Quiz

Name: _____ Teacher: _____

Team#: _____ Class Period: _____

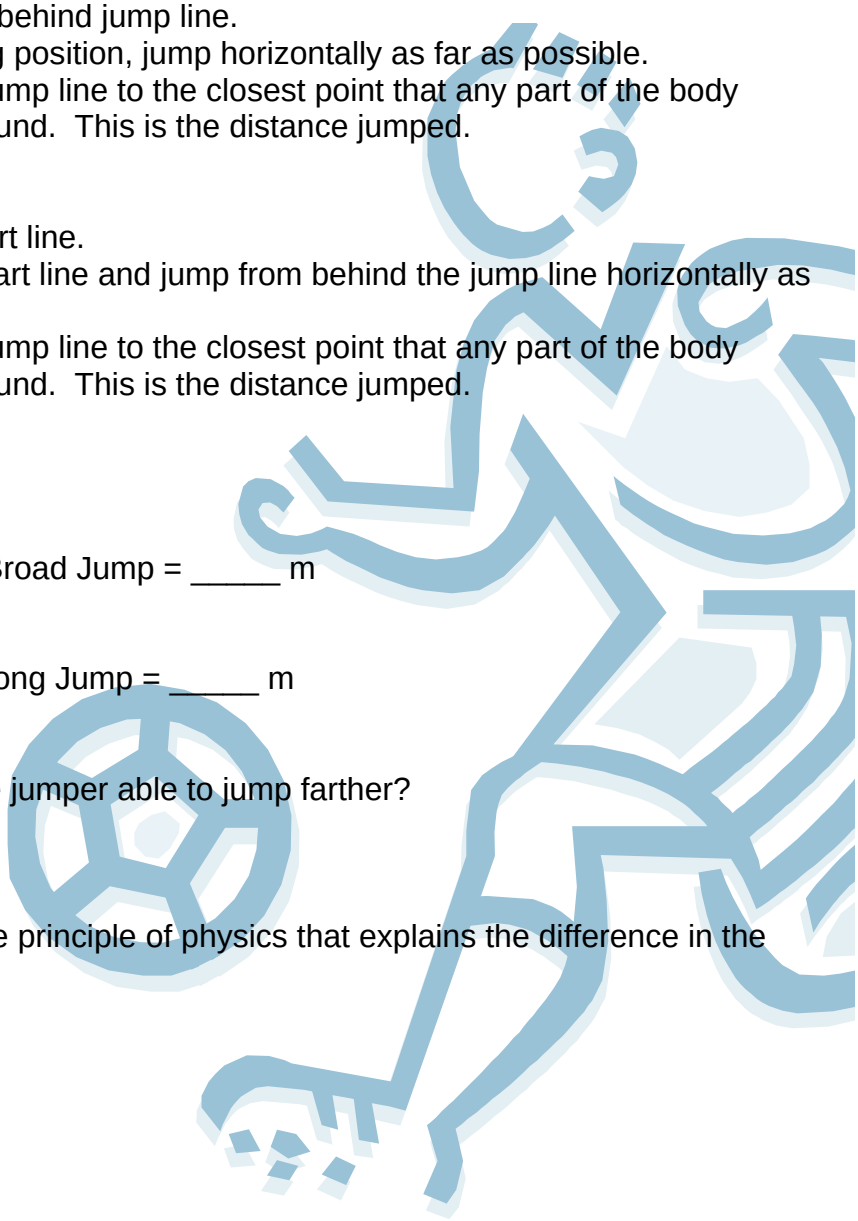
Combined Jump

Procedure:

1. Select one team member to serve as the jumper.

2. Standing Broad Jump
   a. Place both feet behind jump line.
   b. From a standing position, jump horizontally as far as possible.
   c. Measure from jump line to the closest point that any part of the body touches the ground. This is the distance jumped.

3. Running Long Jump
   a. Stand at the start line.
   b. Run from the start line and jump from behind the jump line horizontally as far as possible.
   c. Measure from jump line to the closest point that any part of the body touches the ground. This is the distance jumped.



Analysis:

1. Distance of Standing Broad Jump = _____ m

2. Distance of Running Long Jump = _____ m

3. In which event was the jumper able to jump farther?

4. Name and describe the principle of physics that explains the difference in the distances jumped?

Physics Olympics
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Flour Sack Climber

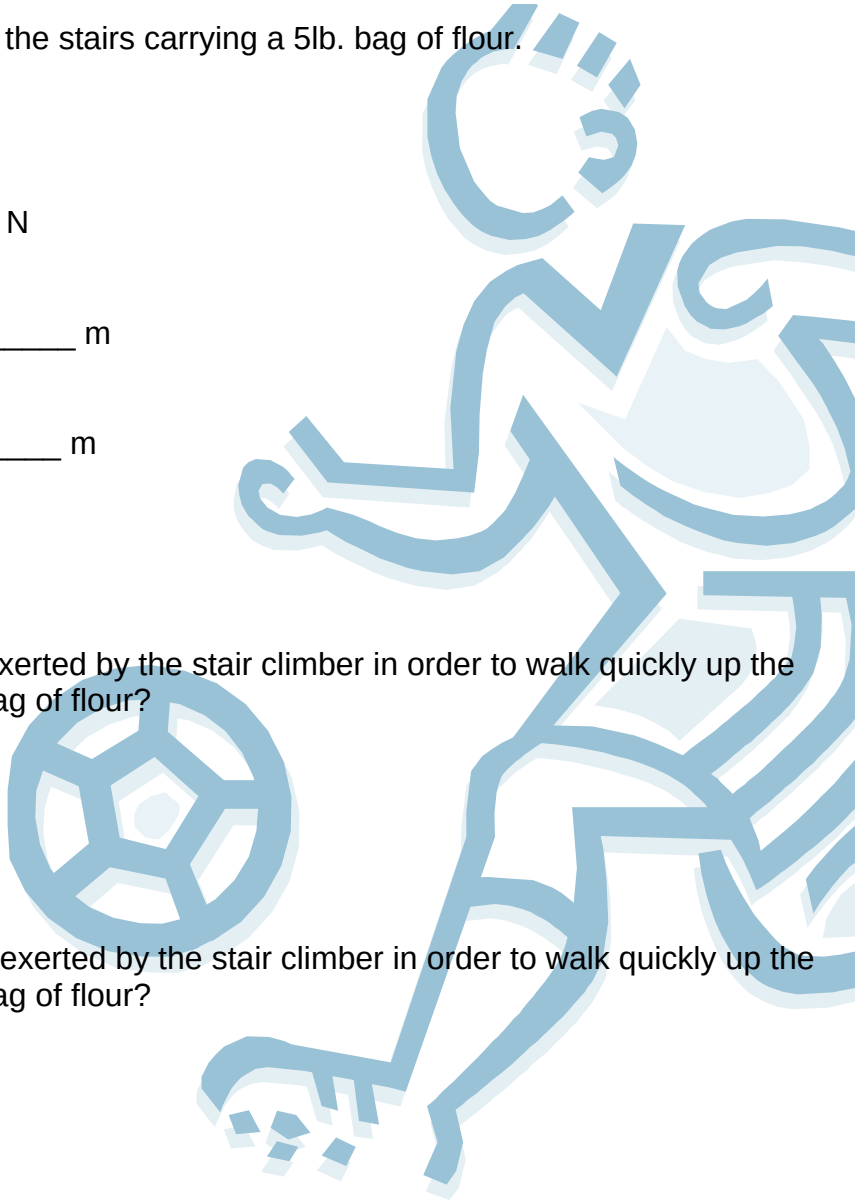
Procedure:

1. Select one team member to serve as the time keeper and a second team member to serve as the stair climber.

2. Measure and record the height of one step.

3. Time Keeper
   - Using a stopwatch, determine and record the time it takes the stair climber to walk quickly up the stairs carrying a 5lb. bag of flour.

4. Stair Climber
   - Walk quickly up the stairs carrying a 5lb. bag of flour.



Analysis:

1. Mass of Flour = _____ N

2. Height of One Step = _____ m

3. Distance Traveled = _____ m

4. Time = _____ s

5. How much work was exerted by the stair climber in order to walk quickly up the stairs carrying a 5lb. bag of flour?

6. How much power was exerted by the stair climber in order to walk quickly up the stairs carrying a 5lb. bag of flour?

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Three-Legged Race

Procedure:

1. Select two team members to serve as the racers. The racers will participate in a 440m (one lap) three-legged race.

2. Select one team member to serve as the time keeper. Using a stopwatch, the time keeper should determine and record the time it takes the racers to complete the race.

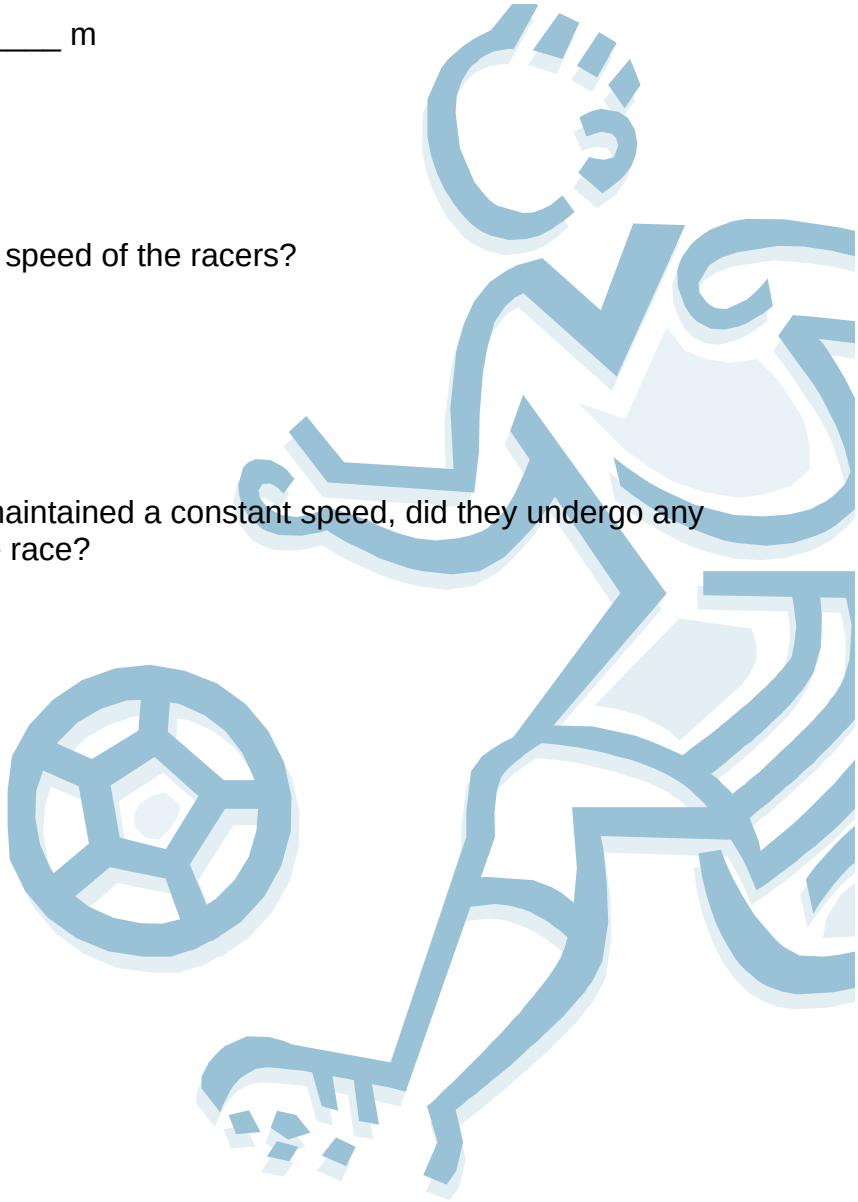
Analysis:

1. Distance Traveled = _____ m

2. Time = _____ s

3. What was the average speed of the racers?

4. Assuming the racers maintained a constant speed, did they undergo any acceleration during the race?



Physics Olympics
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Tug of War

Procedure:

1. Gather all team members. Your team will participate in a tug of war challenge.

Analysis:

1. Name and describe the principle of physics that explains the process of tug of war.

2. Diagram a tug of war where one team is winning. Draw the forces involved.

3. Diagram a tug of war where the teams are equally matched. Draw the forces involved.

Physics Olympics
Activity Quiz

Wheel Barrow Race

Procedure:

1. Select two team members to serve as the racers. The racers will participate in a wheel barrow race.

Analysis:

1. Name and describe the type of simple machine that the racers created.

2. Draw the racers and label the important features of the simple machine.