Name(s) _____

Date _____

University of Kentucky
College of Agriculture, Food and Environment
Cooperative Extension Service
4-H Youth Development

Duck Racer

Directions - Answer questions, move to next step.

1. **Identify the Problem**: How do different surfaces affect the movement of the duck racer?

2. **Conduct Research**: What have you learned about friction?
   Write down two facts you know or two facts you have learned.

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_____

3. **Develop a hypothesis** - Make an educated guess and write it in the space below:
   (example: The duck racer will travel farther on paper than on the carpet)

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4. **Conduct the experiment**.
   Materials needed: Two rulers with ridge in center, four clothes pins, one marble, one piece waxed paper, one piece regular paper, one piece sand paper, one piece aluminum foil, one duck racer and pencil to record results.

   Step one: create a ramp with a ruler or you can use books, be creative

   Step two: place one surface at bottom the ramp
   Step three: roll marble down ramp into duck racer, measure distance duck racer moves
   Step four: repeat step three, three times for each surface and calculate average distance the duck racer travelled.
   Remember to write down results in the data table. This is **collecting data or recording observations.**

DATA COLLECTION TABLE					
Surface	**Prediction Of Distance**	**Trial 1 Distance**	**Trial 2 Distance**	**Trial 3 Distance**	**Total Distance For 3 Trials**
Foil					
Waxed Paper					
Sand Paper					
Regular Paper					
Other Surface					

Draw Conclusions:

5. A) Which surface allowed the duck racer to travel the farthest?

_____

B) Which surface allowed the duck racer to travel the least distance?

_____

C) Why do you think there was a difference?

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D) Provide the definition of friction you found in the dictionary or by looking it up.

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Source: Internet
Original unknown

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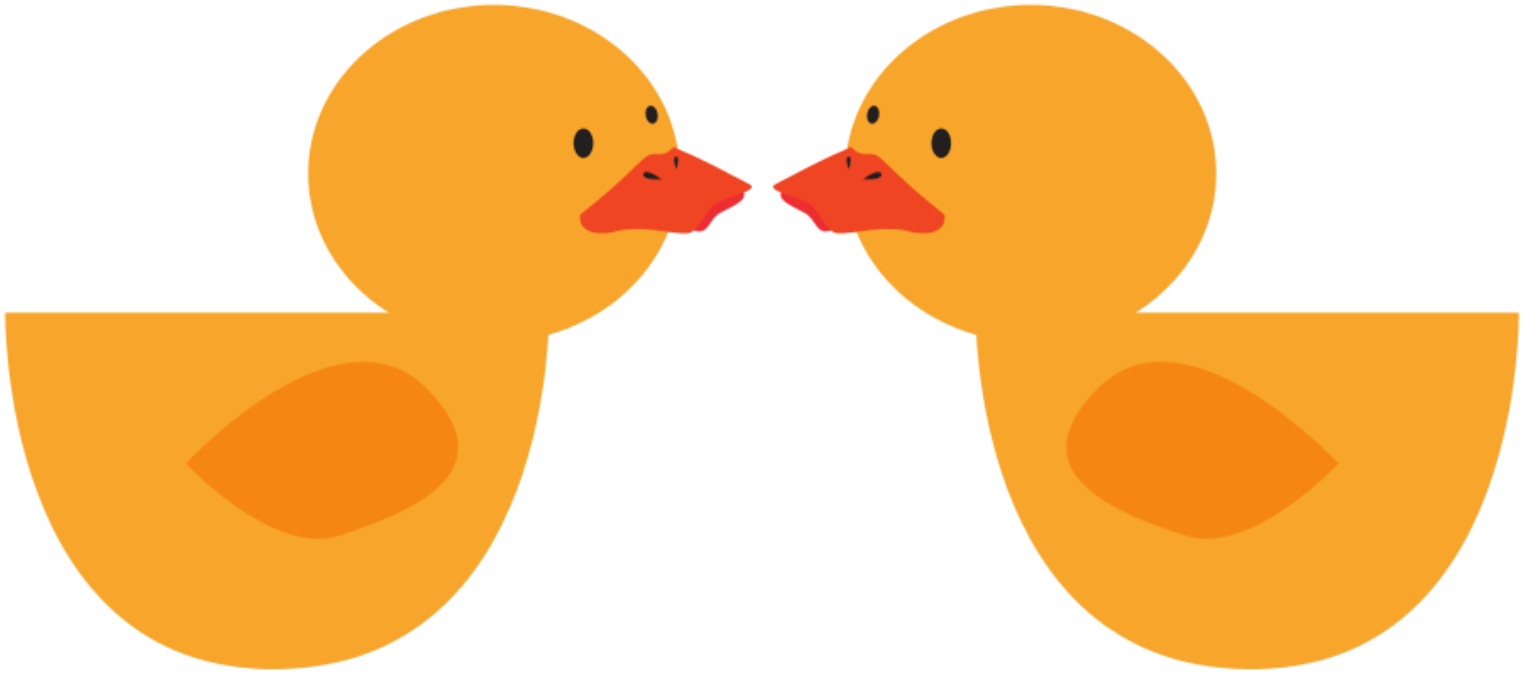

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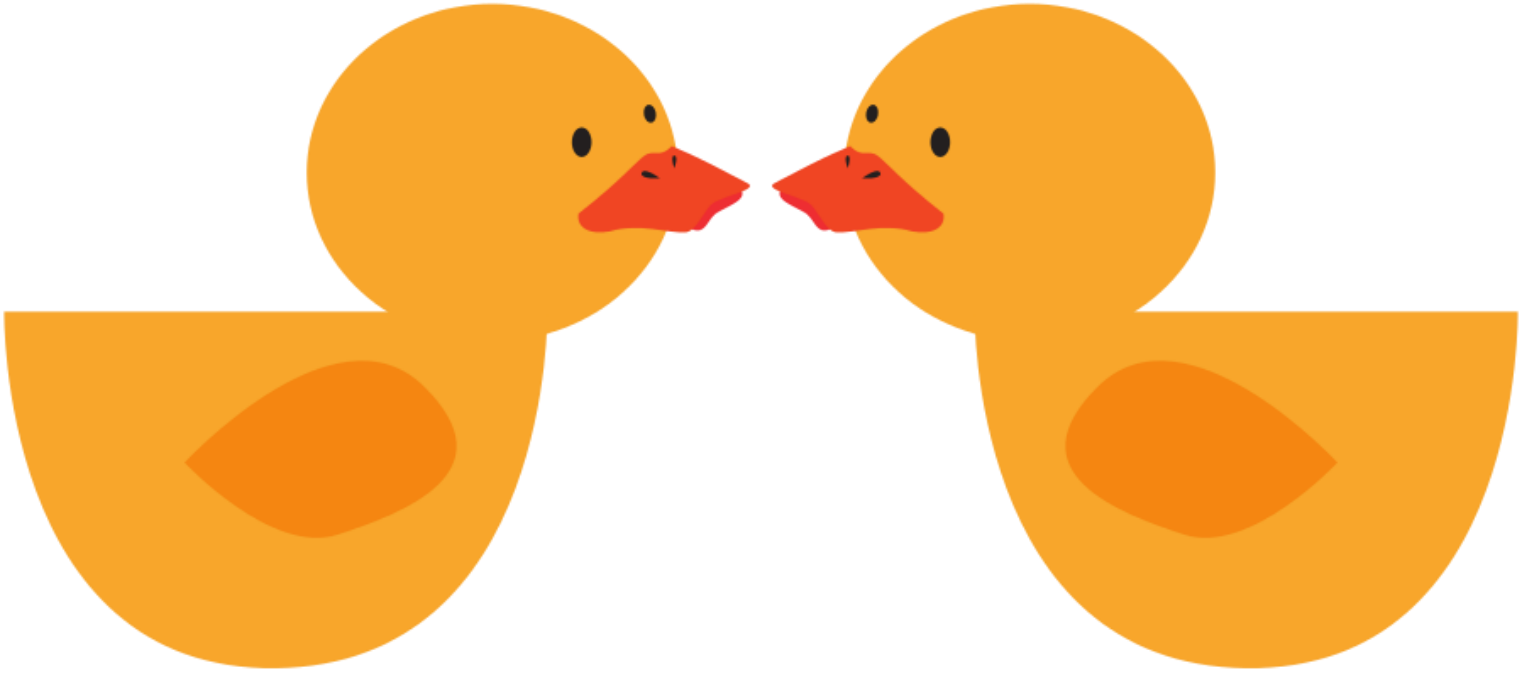

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