

## BLM Answers

### BLM 16–1 Slip, Grip, or Slide

5. Yes. The water on the table reduced the friction and it took less force to move the cup across this surface. The sandpaper increased the friction between the cup and the table, which increased the amount of force required to move the cup across this surface.
6. If there is very little friction between the sole of the shoe and the playing surface, the shoe will slide very easily. The more friction there is, the more grip the shoe will have on the surface.

### BLM 16–3 Anatomy of a Running Shoe

1. upper, midsole, outsole
2. outsole

### BLM 16–5 Two Sports, Two Helmets

1. a) Crash helmets are made to withstand a high speed crash with an object such as a car, tree, or curb.  
b) Multiple-impact helmets must withstand a number of collisions with objects such as the ice, the boards, the puck, and other players.
2. The main difference between the two types of helmets is the foam liner. The foam liner in the crash helmet does not spring back. The foam liner in the multiple-impact helmet squishes and then returns to its original shape.

### BLM 16–7 Chapter 16

#### Word Puzzle

##### Across

2. crash
5. friction
6. SPF
10. chemical change

##### Down

1. multiple-impact
3. rebound ratio
4. raising agent
6. sunscreen
7. UV rays
8. plaque
9. rebound

### BLM 16–8 Chapter 16 Practice Test

1. b) friction
2. d) spring scale
3. a) sound
4. c) ratio
5. A layer of water reduces the friction of surfaces.
6. Sample answer: You can think about whether you need to glide or to stick to the surface and then buy shoes with the right kind of grip.
7. Students' answers will vary, but ideally students will realize that every single time they are snowboarding they should wear a helmet.
8. a) Sample answer: measuring tape or metre stick, 38 mm table tennis ball, 40 mm table tennis ball  
b) Sample answer: Measure the rebound height for each ball in 3 trials. Then calculate the average rebound and the rebound ratio. Compare the two ratios. Graph the results.
9. a) Look for one advantage. For example:
  - It is easier to hit with your golf club.
  - It is easier to find if it goes out of bounds.
 b) Look for one disadvantage. For example:
  - It would be hard to hit it far.
  - It would be hard to control its direction.
10. a) Student drawings will vary. Look for any reasonable sketches that are labelled properly.  
b) The helmet protects head injuries (fractured skulls, brain injuries) when the cyclist hits a tree, a curb, a sign, or a car.

### BLM 16–9 Chapter 16 Test

1. e) hockey
2. c) friction
3. a) bicycle
4. b) chin
5. A spring scale can be used to compare the friction of different surfaces.
6. Oil reduces the friction of surfaces.
7. Students' answers may vary, but ideally they will respond that they should wear a helmet every time they ride a bike.
8. a) Sample answer: measuring tape or metre stick, older, flatter basketball, new properly inflated basketball  
b) Sample answer: Measure the rebound height for each ball in 3 trials. Then calculate the average rebound and the rebound ratio. Compare the two ratios. Graph the results.

- 9. a)** Look for one advantage. For example:
- It would be easier to hit it when you swing your tennis racquet.
  - It would be easier to find if it goes out of bounds.
- b)** Look for one disadvantage. For example:
- It would be harder to hit to the far side of the court.
  - It might hurt your arm or hand when you hit it.
- 10. a)** Student drawings will vary. Look for any reasonable sketches that are labelled properly.
- b)** The helmet protects head injuries (fractured skulls, brain injuries) when the players hit the ice, the boards, the hockey sticks or other players.