

# DEPENDABILITY

## OVERVIEW

lesson 6



### BIG IDEA

**D**ependability is being constantly reliable and trustworthy. It will allow us to continue in our commitments even if it means personal sacrifice.

### KEY VERSES

#### Colossians 1:10b

**L**ive a life worthy of the Lord and please him in every way: bearing fruit in every good work, growing in the knowledge of God.

### MATERIALS LIST

- jar lids (such as mayonnaise lids)
- marbles
- stiff cardboard or hard cover book
- corrugated cardboard
- straws
- string
- duct tape
- colored paper
- scissors (provided)
- beads
- crayons or markers
- butterfly, robot, spider and turtle templates printed on cardstock





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## LESSON STORY



### PREPARATION & MATERIALS

This lesson begins with a simple experiment involving friction and ball bearings. If your group is large divide into smaller groups, each with a set of the following supplies.

- jar lid such as mayonnaise jar lid
- 8-10 marbles
- sheet of cardboard or a hard cover book

### LESSON SCRIPT

Everybody place your hands together palms flat. Now rub as fast as you can.

What did you feel? (Heat) Who can tell me what caused your hands to get hot? (Friction)

Friction is the scientific word for when things rub together. Imagine if I covered your hands with oil. What would happen? (They would slide smoothly)

A long time ago, about 100 years, cars were a brand new idea. Before that people had to walk or ride on animals. One of the most famous people to create the first cars was Henry Ford. He built a huge business. However, he kept running into a problem.

Friction. Raise your hand if you've ever looked inside of the front of a car, under the hood? There are a lot of moving parts in there. Friction

kept causing the moving parts of the car to break down. His cars were not dependable and you can't have a successful business if your product is not dependable.

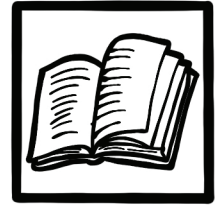
Now, take the lid and place it rim side down on the cardboard (or book). Push it around a bit. Can you feel the friction between the lid and the flat surface?

Around this time there were two red-headed brothers whose last name was Dodge. They were very poor, but also hard working and creative. They studied friction and the movement of balls and invented a type of ball bearing that could hold up to pressure and dirt. Henry Ford started using their ball bearings in his cars making them much more dependable. Suddenly the red-headed brothers were rich!

Now, turn the lid over in your hand. Place 8 marbles in the lid. Now place the cardboard

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(book) on top of the marbles. Carefully press the lid to the cardboard and flip the whole thing over. Now move the lid around. What do you notice? (The lid moves around easier. The marbles reduce the friction.)

The Dodge brothers were also smart. They knew that people were hesitant to spend a lot of money on a car, so they created their own sturdy car called Dodge. They had a reputation for being honest, fair and reliable. Their customers were very excited about the Dodge car. They would tell others about its

rugged construction, quality, and power. Buyers consistently commented that this was a car that could be depended upon.

Did you know that the word “dependability” was not a real word at this time? If you looked in a dictionary 100 years ago you would not find the word dependability. It was a Dodge employee in charge of advertising that invented the word “dependability” when he was writing about the sturdy car. This new word stuck and soon it was included in dictionaries!

### DISCUSSION QUESTIONS

- What are some objects that we have to depend on?
- What are some laws of nature that we depend on? (gravity, heat, rain, etc)
- Who are some people that we need to depend on?
- Who depends on you?
- How can you prove you are dependable?
- How is God dependable?

### LESSON OPTIONS

- Use one lid and marble set and have volunteers come up to try the experiment
- Provide a variety of surfaces to rub/roll the lid on: carpet, sandpaper, wood







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## CRAFT

### THE CLIMBER

In our story about the Ford and Dodge car companies we found that friction was bad and caused the cars to break down. Sometimes friction is good and we depend on it, like rubber tires on pavement or gym shoes on a smooth floor.



### DIRECTIONS

1. Print butterfly, robot, spider and turtle templates onto cardstock.
2. Cut corrugated cardboard into 3 inch x 3 inch squares.
3. Cut a straw into two 2½ inch pieces.
4. Using strong duck tape, tape the straws onto the cardboard parallel to one another and 1/2 inch from the edge.
5. Cut out a creature that is a little bit bigger than the cardboard (ie. spider, person, butterfly). Glue the creature onto the cardboard.
6. Run a 3ft piece of string up one straw and down the other straw. This should create a loop at the top.
7. Tie a bead at both ends of the string.
8. Place the loop of the string over a door knob or other sturdy object making sure the beads are even and the creature is at the bottom.
9. Hold a bead in each hand and gently pull diagonally to the right then diagonally to the left. The creature should climb upward.

### SIMPLIFIED CRAFT OPTIONS

- Precut cardboard
- Precut straws
- Precut string
- Precut a variety of creatures



## MARBLE GAMES

Using the marbles from the object lesson try several of these group games. Reaffirm the importance of dependability within a team.

## DIRECTIONS

1. **Marble Bowling** - You need a long table and place a little figure on the opposite edge. (You can take a little figure from Monopoly). The objective is to bowl the figure off the table using a marble. Everyone has 10 attempts. Who will be the marble bowling master?
2. **Marble Boule** - Throw a larger ball a distance of 2-3 meters. With the much smaller marbles now try to get as close as possible to the larger ball. Winner is who manages to hit the ball.
3. **Alternative to the Marble Boule** - Like above, the larger ball is placed well ahead. The objective for each player is to get his 3-5 marbles as close as possible to the ball. It is also allowed to use your marble to toss other marbles or even the ball, further away. The winner then throws the ball again!
4. **Peeving** - All players are about 3-4 feet away from a wall. Everyone tries to get his marble close as possible to the wall. Winner is the one who gets his marble the closest.
5. **Rebound** - On a smooth floor one person rolls a marble toward wall so that it bounces back. Wait until the marble is stationary. Now the next player tries to roll his marble in a way so that his marble, using the rebound, bumps or moves the first marble. Winner is, whoever's marble comes closest to the first. If someone manages to hit the first marble, he wins and a new round begins.
6. **Circles** - There are 2 circles drawn. The center circle has a diameter of 20 centimeters, the outer circle has a diameter of 2 meters. Place 5 marbles in the smaller circle. With the remaining marbles, each player, now at the outer circle, tries to roll his marble and bump the marbles out of the smaller circle. Each marble that rolls out of the smaller circle goes to the player who managed to do so. If his marble however does not roll out of the circle, it stays there. This game is best in small groups of 2-6.
7. **Marble egg race** - A relay race with runners holding a marble on a spoon. If the marble drops the runner has to start again. The first team to run all their players wins.
8. **Marmot fish** - Fill a bowl with water and place at least 20 marbles in it. The objective is, for each player to fetch the marbles with his toes. When he gets one, the next player gets a go. Winner is the team who fetched the most marbles.





