

MOTION AND SIMPLE MACHINES

3-8 Science Unit Study



THE GOOD AND THE BEAUTIFUL

Motion and Simple Machines

CREATED BY THE GOOD AND THE BEAUTIFUL TEAM

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Unit Information

Science Journal



All The Good and the Beautiful science units include activities in a student journal. Each student should have his or her own student journal, and the parent or teacher will direct the student regarding when to complete the activities in the lessons. The journal can be purchased by going to goodandbeautiful.com/science and clicking on the *Motion and Simple Machines* unit link.

Science Wall



All The Good and the Beautiful science units include vocabulary words to be placed on your science wall, which is a wall or tri-fold presentation board in your learning area on which you can attach the vocabulary words and other images. Cut out the vocabulary word cards at the beginning of the unit. The course will indicate when to place them on the wall.

Lesson Preparation



All The Good and the Beautiful science units include easy-to-follow lesson preparation directions at the beginning of each lesson.

Activities



Many of The Good and the Beautiful science lessons involve hands-on activities. An adult should always closely supervise children as they participate in the activities to ensure they are following all necessary safety procedures.

Unit Videos



Some lessons include videos that were created by The Good and the Beautiful. Have a device available that is capable of playing the videos from

goodandbeautiful.com/sciencevideos or from the Good and Beautiful Homeschooling app.

Content for Older Children



Some lessons include extra content that is more applicable for older children (grades 7–8). Parents or teachers may choose to skip this content if instructing only younger children.

Content for Younger Children

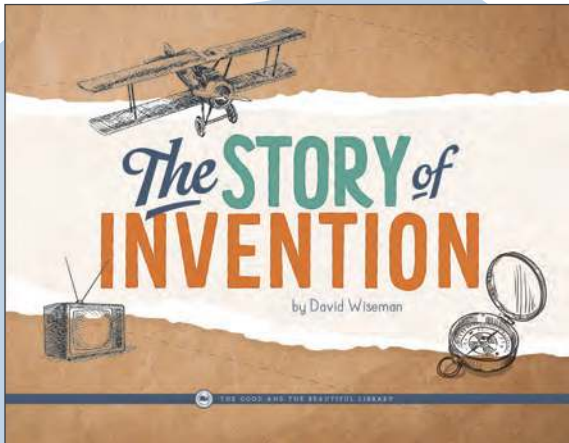


Some lessons include extra content that is more applicable for younger children (grades 3–6). Parents or teachers may choose to skip this content if instructing only older children.



Read-Aloud Book Pack

The books below are optional read-aloud books that complement this unit. These books can be purchased as a book pack by going to goodandbeautiful.com/science and clicking on the *Motion and Simple Machines* science unit product page.



The Story of Invention
by David Wiseman



Motion in Sports
by David Wiseman

CORRELATED BOOKS

The Good and the Beautiful Library has several books that correlate well with the *Motion and Simple Machines* unit. It can be a wonderful experience for children to read books at their levels that are related to the subjects they are learning. The library includes both fiction and nonfiction books organized according to reading level. Find the Correlated Books by going to goodandbeautiful.com and clicking on the *Motion and Simple Machines* unit product page.

GRADES 7–8 Lesson Extensions

How the Extensions Work

Each lesson has an optional lesson extension for children in grades 7–8. Complete the lesson with all the children, and then have the older children complete the self-directed lesson extension. These extensions are located in the *Grades 7–8 Student Journal*.

Answer Key

The answer key for the lesson extensions can be found on the free Good and Beautiful Homeschool app in the science section. Visit goodandbeautiful.com/apps for information on accessing the app. The app can be accessed from a computer, phone, or tablet.

Flexibility

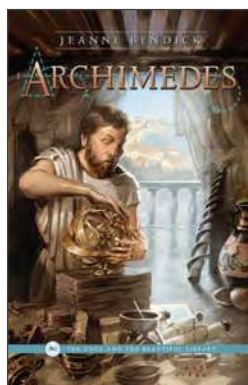
The amount of time it will take to complete each lesson extension will vary for each child. The average time is about 10–15 minutes per extension. Parents, teachers, and children may choose to omit parts of the lesson extension if desired. Encourage the children to stretch their capabilities, but also reduce work if needed.

Taking Notes

Some of the grades 7–8 lesson extensions have the children summarize the material read. Teach the children to look for key information, summarizing the most important points. Students can also add notes with their thoughts and the facts that are most interesting to them.

Optional Grades 7–8 Reading Book

We recommend *Archimedes* as extra reading for students in grades 7–8. This book can be purchased by going to goodandbeautiful.com/science and clicking on the *Motion and Simple Machines* unit link.



Archimedes
by Jeanne Bendick



Supplies Needed



This section lists all the extra supplies needed for the activities within the lessons.

Lesson 1

- Kitchen chair
- Sofa (or other very heavy object)
- Heavy book (like a Bible or dictionary)
- Pillow (larger and weighing less than the book)

Lesson 2

- 10 pennies
- Index card
- Cup (glass or ceramic is best)
- Marble or ping-pong ball
- 8"x10" piece of sandpaper (or other similar surface like cement, grass, roadway, or sand tray)
- 8"x10" piece of felt (or other similar surface like a sweater or cloth)

Lesson 3

- Meterstick, yardstick, or ruler
- Marble (or other ball)
- Masking tape
- Timer
- Calculator
- Compass (optional)

Lesson 4

- Ping-pong ball
- Marble
- Drinking straw (for each child)
- Scissors (for each child)
- Glue (for each child)

Lesson 5

- Timer
- Small toy car

- 6 thick books
- Cookie sheet (or ironing board or long piece of cardboard)
- Piece of scrap paper
- Calculator
- 2 different-sized balls (not a ping-pong ball) like a marble, golf ball, basketball, soccer ball, tennis ball, baseball, etc.
- Pencil (optional)
- Piece of string about 6 inches long (optional)
- Paper clip (optional)

Lesson 6

- Apple or other similar item (orange, tennis ball, rock, etc.)
- Balloon
- Access to a doorknob
- One red and one blue colored pencil per child
- Tape
- Drinking straw
- Thread (7–10 feet long)

Lesson 7

- Empty spool (for each child) Rubber band (for each child) (Note: you want the rubber band length to be similar to the spool length.)
- Washer (for each child)
- Paper clip (for each child)
- Pencil (for each child)
- Tape
- Ruler (grades 7–8 only)
- 2 sheets of blank paper (grades 7–8 only)

Supplies Needed

(CONTINUED)



Optional Activity Supplies (per child):

- Balloon
- Empty toilet paper roll
- Scissors
- Tape
- Marshmallows, pom-poms, or cotton balls

Lesson 8

- A container of crayons
- Broom
- Dishcloth
- Scissors (for each child)
- Glue stick

Lesson 9

- Snack for each child (such as an apple, a carrot, string cheese, etc.)
- Pencil
- Ruler (a firm, not flimsy one)
- 10 pennies
- 5-oz can of food (like tuna or cat food)
- Tape
- Ping-pong ball
- Red and blue colored pencils (for each child)

Lesson 10

- Access to a doorknob

Optional Activity Supplies:

- Raw potato (per child)

- Knife (to cut potatoes)
- 7–9 craft sticks (per child)
- Cardboard or cardstock, at least 8.5"x11" (per child)
- 3–6 brads, at least $\frac{3}{4}$ inch (per child)
- 1 pushpin (per child)
- Pointed scissors or a screwdriver (to poke holes through the cardboard)

Lesson 11

- Timer
- Screw
- Nail
- 1 empty spool or bobbin
- 2 paper clips
- 2 pencils or skewers
- Paper or disposable plastic cup
- 6-inch string
- 6-foot string
- Items to fill a paper cup, such as toys, cereal, marbles, cards, LEGO® building blocks, etc.
- Tape

Lesson 12

- A variety of supplies for the children to build with, such as straws, cups, string, tape, craft sticks, pencils, toilet paper rolls, rubber bands, bobbins, washers, toothpicks, spools, screws, LEGO® building blocks, etc.
- A device that can record video (optional)

MOTION AND SIMPLE MACHINES

Grades 3-6

STUDENT JOURNAL

This journal belongs to:



THE GOOD AND THE BEAUTIFUL



INSTRUCTIONS

This student journal accompanies *The Good and the Beautiful Motion and Simple Machines* science unit. It contains all the worksheets and journal pages that are needed to complete the unit. Each student will need his or her own copy of the science journal.

The Motion and Simple Machines lesson extensions are also found here. These extensions are optional for older students (grades 7–8) to complete on their own. Each extension is accompanied by lined paper so the student can keep his or her work in one place.

Have each student take his or her time to create high-quality work as the activities and worksheets are completed. Students may enjoy looking back on their past discoveries when they've finished.

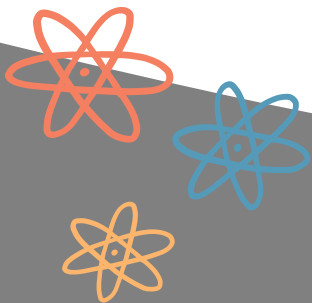




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