

# When I grow up, I want to be a...Petroleum Engineer!

<https://careers.doi.gov/occupational-series/petroleum-engineer>

## What Do Petroleum Engineers Do?

Petroleum Engineers solve complex problems that impact our natural resources and protect the great outdoors while powering our future. They design and develop methods for extracting oil and gas from deposits below the Earth's surface.

Fields of Study: Petroleum Engineering, mechanical engineering, chemical engineering, civil engineering.

Bureaus that hire Petroleum Engineers:



This is a job for you, if you enjoy:

- Enjoy Science and collaboration: As a petroleum engineer you have the opportunity to collaborate with different background in STEM like geologist, environmental specialists, and more!
- Innovation Mindset: Creativity to make static data and information into real life solutions.
- Engineering Problem Solving: ability to design and develop solutions for the use of engines, machines, and structures.

## Age-Appropriate Activities

### Activities for Ages 4 Years and Under:

- Building Blocks: have your kids build a structure with building blocks
- [Oil Spill Clean-Up](#) (below)

### Activities for Ages 5 – 8 Years:

- Fort building: Build a fort with your kids!
- [Explore Gravity and Friction with Marble Runs](#)

- [Oil Spill Clean-Up](#)
- [Marshmallow Challenge](#) (below)

### Activities for Ages 9 – 12 Years:

- [Explore Gravity and Friction with Marble Runs](#)
- [Oil Spill Clean-Up](#)
- [Marshmallow Challenge](#)

### Activities for 13+:

- [Marshmallow Challenge](#)

## OIL SPILL EXPERIMENT FOR KIDS

### YOU'LL NEED

Clear plastic container

Spoon or pipette

Cotton buds

Tray

Water

Paper towel

Vegetable oil

Cotton wool

Sponge

### OIL SPILL INVESTIGATION INSTRUCTIONS

#### STEP 1 – ADD OIL TO WATER

Half fill the clear container with water. Drop a small amount of oil onto the water.

The oil will float on top of the water. Even if you shake the container (cover it first) the oil and water will separate again.

Use a cotton bud to move the oil around surface of the water.

#### STEP 2 – OIL CLEAN UP

Pour enough water into the tray so the surface is completely covered, and the tray is about half full.

Carefully drop two tablespoons of oil onto the surface of the water.

Experiment with the absorbent materials to discover which cleans up the oil spill the best.

### OIL SPILL CHALLENGES

Try to build something to contain oil to one area of the tray.

Try the experiment again, but this time use the same amount of each absorbing material and collect the oil for the same amount of time. Which material absorbs the oil the most effectively?

Another idea is to dip a feather in the oily water and watch as it starts to feel heavier. Imagine being a bird with oil covered feathers. This activity can be further extended by exploring different methods of cleaning oil covered feathers. Water and water with washing up liquid are great things to try first.

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## Marshmallow Challenge

### YOU'LL NEED

20 sticks of spaghetti

3 feet of string

3 feet of tape

1 marshmallow

### MARSHMALLOW CHALLENGE INSTRUCTIONS

Build the tallest free-standing structure you can in just 20 minutes using no more than 20 sticks of spaghetti, 3 feet of tape, 3 feet of string, and one marshmallow.

The marshmallow must be on top and cannot be deformed to hold it in place. The structure must stand firmly on its own; it cannot be propped up, held, or suspended from the ceiling.