

Activity Challenge: Be An Automotive Engineer

Every day you go places and most of the time you are probably going in a car, bus, or some sort of motorized vehicle. An automobile is something we use every day, but we don't usually stop to think about all the engineering, systems and people involved to make a car. In this challenge let's practice thinking like an engineer to design a car!

1 Ask the girls questions to get started:

- ▶ What are automobiles used for? (Answers may include personal transportation, delivering various products and mail, entertainment and sports.)
- ▶ How are automobiles designed differently based on their purpose? (Answers may include delivery vehicles need large cargo space, racecars need to be sleek and fast.)

2 Do this activity:

- ▶ Find household items that could be used to build a car that will move. This could be something like a cucumber for the body of the car, bottle caps for the wheels and toothpicks for the axels.
- ▶ Give the girls time to build their car model. To make it more of a challenge, put a time limit on how long they have to assemble their materials!
- ▶ Once the car models are built, it's time to get moving! Try rolling your cars down an incline. Does it move? What works well? What doesn't work so well? An engineer is constantly looking for ways to improve their designs. Talk about what is and isn't working, and see if you can engineer a solution to create an even better car model.
- ▶ Give girls additional time to continue improving their car models, and then test them again using the same incline as before.

3 Reflect on the experience:

- ▶ Were you able to improve your vehicle? How did you improve it?
- ▶ What are some of the things you did not take into consideration when first building your vehicle? How does this reflect the experience of professionals in the automotive industry?

*This activity is aligned with (but does not fulfill all the badge requirements for) the Daisy, Brownie, Junior Automotive Design badges. You can find the complete badge curriculum on the **VTK!***

