

Hot Wheels

Making Your Dream Car a Reality

CARS, CRAFTS
AND COMMERCE

QUEST 04
PRE-CAL

STATE FAIR OF TEXAS
CURRICULUM

The dream of just about every 16-year-old is to own their own car. However, owning a car comes with a slew of financial responsibilities! The major deciding factor of which car to buy is the cost of the monthly payment. Let's use your math knowledge to calculate which car you should purchase.



During this Cars, Crafts, & Commerce Quest, you will:

- ★ Use the State Fair to pick a car you wish to own one day
- ★ Create an exponential function to determine your monthly payment
- ★ Draw your dream car as part of an art project
- ★ Write a narrative in which you own your dream car, including the life circumstances that brought you to this point.



Standards

- ★ Math Pre-Cal TEKS: PC.2.n
- ★ Art TEKS: Art I: 1A, 1D, 2F, 4B; Art II: 1A, 2D, 4B
- ★ ELAR TEKS: E4(14)(A), E4(18), E4(19)
- ★ Career Development TEKS: PS.1.G; PS.4.B; PS.5.A; PS.5.C



Before You Go – 20 min prep time, 45 min teaching time

- ★ Define and discuss the following terms:
 - o Exponential functions, loan period, interest rate, tax, title, license, and any other relevant terminology
- ★ Put students in partners
- ★ Pairs will research average percentage rate for a car
- ★ Research loan period options
- ★ Discuss costs of purchasing a car (tax, title, license)
- ★ Work through word problems using exponential functions

STATE FAIR MAP



While You're There

The objective of your visit is to find your dream car and note the cost of the car, so you can determine the monthly payment later when you're back at school. Then you'll know if you can afford it someday!

- ★ **HOT WHEELS:** Find the car/truck you have always dreamed of owning and at least one other vehicle you would like to own.
 - Visit all 3 locations of vehicles for sale
 - Record the sticker price of your dream car
 - Also find at least one other car and record its sticker price
 - Record the miles/gallon of each car
 - Write the list of features each car has included with the sticker price
 - Don't forget to take a picture of each car



Invitation

- ★ Visit the State Fair of Texas's famous car show to pick out your dream wheels.



Plan Your Route

- ★ Find the Automotive Building
- ★ Then visit the Centennial Building
- ★ Finally stop by the Truck Zone



Optional Materials to Bring

- ★ Pen or Pencil
- ★ Notebook or Paper
- ★ Smartphone or Tablet

State Fair Dream Car Info

Dream Car #1		Dream Car #2	
Make:		Make:	
Model:		Model:	
Sticker Price		Sticker Price	
Miles/Gallon		Miles/Gallon	
Feature 1		Feature 1	
Feature 2		Feature 2	
Feature 3		Feature 3	
Feature 4		Feature 4	
Feature 5		Feature 5	
Feature 6		Feature 6	



After the Fair - 1 day project

When you return to class following your State Fair visit, you will investigate the total amount of a loan you need for each car.

★ Use this formula to calculate your monthly payment on each car:

$$A_p = R \left(\frac{1 - \left(1 + \frac{r}{12}\right)^{-n}}{\frac{r}{12}} \right)$$

★ A_p represents total loan amount; R is your unknown; r is interest rate; and n is loan period in months (5 years for this lesson).

★ Create a presentation of each car using technology.

Include:

1. Picture of each car
2. Math solving for R , monthly payment
3. Specs of each car
4. A list of careers you could have with salaries that could support each car's monthly payment



ART PORTION

Now that you have had the chance to peruse the lot of amazing cars at the State Fair of Texas, as well as conduct some research on your dream car, why not design your own?

- ★ Create a detailed, clean drawing of your dream car.
- o It does NOT have to be real - just one that includes everything you could think of for your ideal ride, inside and out.
 - o Your needs might include speed, luxury, or even some aerodynamics.
 - o Use your imagination with this - don't hold back!

★ Along with your drawing, create a list of key features that your car will include and why you feel those are important.

o Use the list of features you wrote down from the cars you found at the Fair as a guide, but don't stop there; what other features can you dream up?

★ Present your design to your peers, or better yet, have everyone display their work, and have a "car show."

o Talk about your car design, and why you included the features that you chose to include.



ENGLISH PORTION

Write a story imagining what your life would be like owning your dream car.

★ Did you win your car in a contest or are you a celebrity who can purchase any car you want?

★ Where do you live? Do you travel often?

★ Use your imagination and come up with your dream life that gave you the opportunity to own your dream car.

★ Your story should include:

- o 2 pages
- o Double spaced
- o Times New Roman, 12 point font
- o Descriptive imagery and vivid language to describe your life
- o At least five literary elements (personification, metaphors, etc.)