

The Most Magnificent Thing

RIF EXTENSION ACTIVITIES FOR EDUCATORS

STEAM-THEMED: SCIENCE, TECHNOLOGY, ENGINEERING, ART, MATH



SCIENCE, ENGINEERING EGG-CELLENT DESIGN

Materials: eggs (1 per team), sponges, cardboard tubes, tissue paper, rubber bands, cardboard, tape

The problem:

Eggs are fragile; if dropped, they will crack.

The task:

Students should work in small groups to design an egg protector. Each design should be drawn out and then executed using the materials provided.



The challenge: Have each group test out their egg-cellent designs by placing an egg in the protector and dropping it from 3 feet. Surviving eggs should then be dropped from 6 feet. Which group was able to design the winning egg protector? What design elements made the difference? Compare successful and unsuccessful designs.

TECHNOLOGY, ENGINEERING INNOVATIVE TRACKING

Have students visit <https://www.youtube.com/watch?v=O-8SAhAC0DY>. They should each design their own track for the rider to attempt to finish. How “magnificent” can they make their track? Is it possible

to add hills and loops? What factors play into the rider being able to get to the finish line without crashing? Have students compare the success and features of their courses. How might this simple technology prove useful when building a road or even a roller coaster?



ENGINEERING RECYCLED RODS

Materials: newspaper, straws, tape, pipe cleaners, hole punch, string

Lay a sheet of newspaper out flat. Starting at one corner, begin rolling paper around a straw. After the newspaper rod has begun, pull the straw out and continue rolling until the end of the paper. Tape to seal. Make several rods. Let students brainstorm how to use the rods to build something magnificent. They should draw out their plan and think about how their creation will hold together.

ART, WRITING TRASH TO TREASURE

Materials: recycled or scrap materials

The most magnificent thing was created from recycled items. Collect scraps and other items you would normally throw away (make sure they're clean!). Make or build something with the items. Will it be a collage, sculpture, model, machine, or something else truly magnificent? Have students write descriptive paragraphs about their creations.



MATH MAGNIFICENT MATH MENU

See Magnificent Math Menu *handout*.



Reading Is
Fundamental

Magnificent Math Menu

HANDOUT



CHOOSE 3 ACTIVITIES TO COMPLETE

<p>TARGET PRACTICE <i>(2 dice, 1 player)</i></p> <p>Choose a number between 6 and 12 as your target number. Roll the dice. If both dice add up to your target number, write down the equation. If not, put a tally mark on your paper and keep rolling! Roll a minimum of 20 times.</p>	<p>TAKE IT AWAY <i>(3 dice, 1 player)</i></p> <p>Divide a piece of paper in half. On one side, roll 2 dice. Add to get a total. Roll 1 die on opposite side. Subtract this number from the sum of your 2 dice. Record the subtraction problem. Create at least 10 problems.</p>	<p>ROLL A SUM <i>(2 or 3 dice, 1 player)</i></p> <p>Roll 2 or 3 dice. Write down the number from the face of each. Add the numbers together and record the sum. Roll your dice a minimum of 15 times. You should have at least 15 different equations when finished.</p>
<p>CARD SHARKS <i>(cards, 2 players)</i></p> <p>Divide a deck of cards evenly between you and a partner. Turn cards face down. At the same time, you and your partner each flip over your top 2 cards. Add them together. The person with the highest sum gets all 4 cards. If your sum is the same, each person draws a third card to add to their sum. Play until all cards are gone. (Face cards = 10.)</p>	<p>CARD COUNTERS <i>(cards, 1 player)</i></p> <p>Place a deck of cards face down. Flip over the top 2 cards from the deck. Use counters to represent the number from each card. Add all the counters together. Write down your equation and sum. Create a minimum of 10 equations. (Face cards = 10.)</p>	<p>TENS AND ONES <i>(cards, 2 players)</i></p> <p>Divide a deck of cards evenly between you and a partner. Turn cards face down. Flip over 1 card to represent the ones spot. Flip over a second card and place in the tens spot. The person with the smallest number keeps the cards. Keep playing until 1 player has all the cards. (Face cards = 10.)</p>
<p>EMPTY THE BAG <i>(2 dice, 1 player)</i></p> <p>Fill a paper bag with pop cubes—don't count them. Roll 2 dice. Add to find the sum. Take that many cubes out of the bag. Roll and repeat until all the cubes are out of the bag. Link the cubes into rows of 10. How many cubes were in your bag?</p>	<p>TOSS AND TALLY <i>(4 dice, 2 players)</i></p> <p>On the count of 3, both players roll 2 dice each. Each player adds to find the sum of their dice. The player with the highest sum gets a point or tally mark. Keep playing until 1 player reaches 25 tally marks or points.</p>	<p>SECRET NUMBER <i>(cards, 2 players)</i></p> <p>Each player has a deck of cards. Player 1 places a "secret card" face down. Player 2 tries to guess the number on the card by selecting their own card and placing it face up. Player 1 says if the secret card is greater or less than that card. Player 2 continues to draw cards until they find the value of the secret card. Players then switch roles.</p>