Student Assent Form: Web-based-Application to Improve Problem-Solving

My name is Michael Briscoe and I am from George Mason University's education department.

I want to talk to you about a research study I am doing. In our study, we want to learn more about tools to help students with problem solving. Your parents have already agreed that you may take part in the study, so feel free to talk with them about it before you decide whether you want to join the study.

What will happen to me in the study?
We would like you to participate because you are studying important math problem solving strategies. If you would like to participate in the study, you will be asked to complete two math worksheets and use a website that will ask you about how you are solving problems.

What are the risks?
There are no risks.

What are the benefits? And, there are no known benefits for you as you participate in this study.

Will anyone know that I am in the study? (Confidentiality)
You will write your name on the math worksheets, but we will cut that part off the worksheet as soon as we write a random user name on it. You will use this random name on the website. The online database will only have your math answers, pictures of your scrap work, and this random name. You will be allowed to describe your strategies as a voice memo, which we will transcribe. You can also type this information if you prefer. It will have no information that someone could use to identify you. We will have one piece of paper with your name and the random name. This piece of paper will stay in a locked drawer.

What if I do not want to participate or decide later to withdraw?
Being in this study is voluntary. You don't have to be in this study if you don't want to or you can stop being in the study at any time. You will still get to use all these math tools, but we will no longer use your data.

Who can I talk to about this study?
If you have questions about the study or have any problems, you can talk to you parents, or call Dr. Angela Miller, 703-993-5560, the Principal Investigator for this study. If you have questions about the study but want to talk to someone else who is not a part of the study, you can call the Institutional Review Board office at George Mason University at 703-993-4121.

Your signature below means that you have read the above information about the study, have had a chance to ask questions to help you understand what you will do in this study, and you are willing to be in the study. Your signature also means that you have been told that you can change your mind later if you want to.

_____ _____

Child's Name (printed) and Signature Date

Upload at: https://myedme.com/login/research/

Parental CONSENT FORM: Web-based-Application to Improve Problem-Solving

RESEARCH PROCEDURES

This research is being conducted to see whether this website can improve problem solving skills. If you agree to allow your child to participate, your child will participate in the same classroom activities as everyone else. The class will be asked to complete two math worksheets and engage with a problem solving website five times. The website will ask questions about your student's problem-solving strategies. Student strategies will take a picture of their scrapwork and can describe their strategies as an audio clip or by typing it into the website. All pictures and audio files are saved on a secured server and stored offline. Only the researchers will access them.

In addition, with your consent, researchers will give your classroom teacher a sheet with names, a unique identifier, and then he or she will write your student's GPA, age and gender. Your teacher will then cut off the names and hand the unique identifiers and GPA data to the researchers. These GPAs will be matched with data from the worksheets and problem-solving strategies. We will only report data that is averaged from many students, no data from your child will be reported.

This process will take no additional time for your child.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There are no benefits to you or your child other than to further research in math education.

CONFIDENTIALITY

The data in this study will be confidential. Your child will use a random user name on the website. Students will complete two math worksheets and their names will be removed from these sheets as soon as the data is matched to the user name. The database is secure and contains no personally identifiable information. We will save these consent forms and the identification key in a locked drawer in our offices. Only Dr. Miller will have access to the identification key.

De-identified data could be used for future research without additional consent from participants.

PARTICIPATION

Your child's participation is voluntary, and you may withdraw your child from the study at any time and for any reason. If you or your child decide not to participate or if you or your child withdraw from the study, there is no penalty or loss of benefits to which you or your child are otherwise entitled. There are no costs to you or any other party. Your child will still use these worksheets and website. If your child does not participate in the research, he/she will still use these worksheets and website as part of regular course activities but that data will not be used for research purposes.

CONTACT

This research is being conducted Dr. Angela Miller at George Mason University. She may be reached at 703-993-5560 for questions or to report a research-related problem. You may contact the George Mason University Institutional Review Board office at 703-993-4121 if you have questions or comments regarding your or your child's rights as a participant in the research.

Parental CONSENT FORM: Web-based-Application to Improve Problem-Solving

This research has been reviewed according to George Mason University procedures governing your or your child's participation in this research.

CONSENT

I have read this form, all of the questions I have at this time have been answered by the research staff, and I agree to allow my child to participate in this study.

_____ _____

Signature Student Name

Date: _____

You can email these forms to edme@myedme.com or upload at: https://myedme.com/login/research/

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1st Set: Kara Loves Music!

1) Kara's playlist has three songs:

- "Each Day" (3 minutes)
- "Best Friends" (3 minutes)
- "This Weekend" (2 minutes)

How many times can Kara listen to her entire playlist during a 35-minute car ride? _____

Explain your answer using numbers, words, and/or pictures.

Use this table for problems 2 and 3

Album	Length (in minutes)
Driving Fast	43
Silent Sister	58
Forever Funny	37
Today's Five	45
The Barnyard	52
Free Bison	48

2) This weekend, Kara will take a $2\frac{1}{2}$ hour car ride to visit her relatives. She wonders if she can listen to all the albums shown in the table above.

Can Kara listen to all of the albums on her car ride? _____

Explain your answer using numbers, words, and/or pictures

3) Kara decided to listen to the Free Bison album on the $2\frac{1}{2}$ hour car ride back home. She started playing it at the beginning of the car ride and just finished listening to it 3 times in a row.

Use *M* to represent the number of minutes before Kara gets home.

Write an equation that could be solved to determine how many minutes it will be before Kara gets home.

_____

2nd Set: Setting up the Roadrunner Race

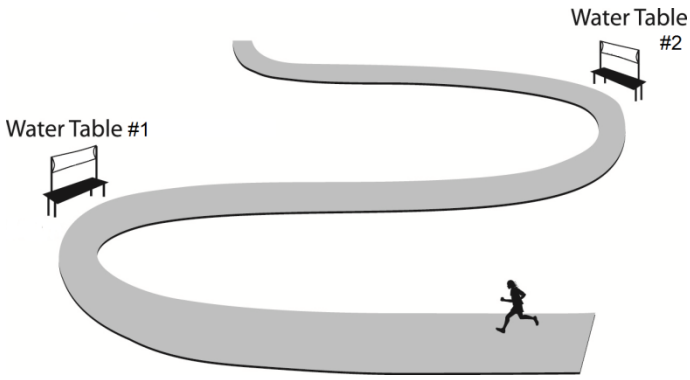
Last year, Rob set up the Road Runner Race for his school. The race was 1,200 meters long and 188 people signed up to run the race. 38 people did not show up to run.

1) This year, there will be 3 times as many runners as last year.

a. How many people will run the race this year? _____

b. Explain your answer using numbers, words, and/or pictures.

2) This year, the race will be 4 times as long as last year. Rob has 6 water tables to use along the race route. The distance between water tables is the same and the last one will be placed at the finish line.



a. How far apart is the distance between water tables #1 and #2?

_____

b. Explain your answer using numbers, words, and/or pictures.

3) Rob bought 27 packs of cups, with 12 cups in each pack. There are 6 tables and Rob will put the same number of cups on each table.

a. How many cups will be on each table? _____

b. Explain your answer using numbers, words, and/or pictures.

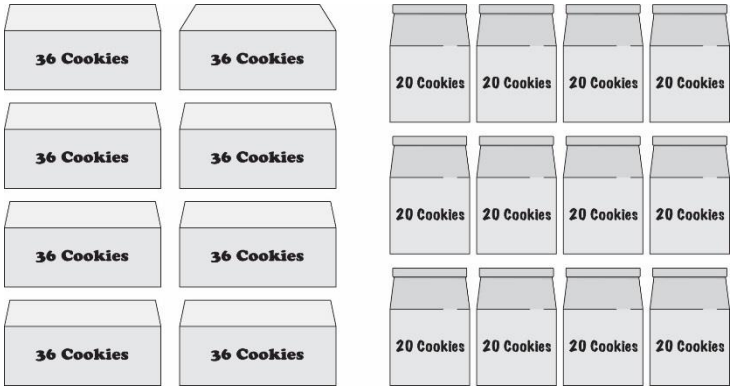
Upload at: https://myedme.com/login/SRL02k/

3rd Set: Cookies for Bake Sale Volunteers

This year, Central Middle School is having a bake sale. Two teams of students bake cookies.

- Josie's team puts cookies in 8 boxes with 36 in each box.
- Rich's team puts cookies in bags of 20.

4) The two teams bake the number of cookies to fill 8 boxes and 12 bags as shown.



a. How many total cookies did the students bake?

_____

b. Explain your answer using numbers, words, and/or pictures.

5) How many more cookies are in 5 **boxes** than are in 5 **bags**? _____

Explain your answer using numbers, words, and/or pictures.

6) After the bake sale, 1 box and 1 bag of cookies remained. The organizers gave the remaining cookies to the 6 students on the teams. Each student received the same number of cookies.

a. What is the largest number of cookies each student could have received? _____

b. How many extra cookies would be left after each student received that number of cookies?

_____

Upload at: https://myedme.com/login/SRL03k/

4th Set: School Craft Math

There are 56 birdhouses at school. Today, 4 classes made more birdhouses. Each class made 8 birdhouses.

How many total birdhouses are there now?

Mr. Dent had 32 markers in his classroom. He buys new boxes of markers that have 9 markers in each box. Now, he has 86 markers.

How many new boxes did he buy?

Jayson had 274 postcards in his collection. He wanted to give Sam some of his postcards. Jayson gave Sam 8 postcards from each of his collections below:

- Arts
- Sports
- Schools
- Parks
- Beaches
- Sunsets

How many postcards does Jayson have left?

5th Set: The Final Set, try hard!

Adeline has 8 packs of Fun Gum. Each pack has 7 pieces of gum. Marisol buys Juicy Gum. Each Juicy Gum pack has 9 pieces of gum.

Adeline has 11 more pieces of gum than Marisol.

How many packs of gum did Marisol buy?

Students in 3 art classes cut 728 inches of ribbon into many 8–inch long pieces. Two classes together cut 656 inches of ribbon.

How many 8–inch long pieces of ribbon did the other class cut?

Last summer, Jon's family found 152 shells at the beach. This summer they were at the beach for 7 days. Each day they found 9 shells.

How many fewer shells did they find this year than last year?

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