Going Places with Math!

Examples of finding math on the go.

By Car or Bike

- We have **5 more minutes** to drive before we get to Grandma's house! Let's see **how many** signs we pass before we get there.
- Do you see the **number** on that sign? It tells us the speed limit is **15**. That tells us how fast we may drive. We need to drive **no more** than **15 miles per hour.** What is a number **less than 15**?
- That yellow sign **next to** the car has **3** sides. But it is not a **triangle**, because it has rounded edges. Find another sign that is a **shape** with sharp points or edges.
- The park is **5** blocks from here! When we're in the car, it only takes us **2 minutes** to drive there. If we ride our bikes instead, do you think it will take us **less** or **more** time than **2 minutes**?

On the Bus, Train, or Subway

- Let's find a seat in the **front** of the bus, **behind** the driver. Do you see an open seat in that area?
- We have only **5** more stops until we get to the library. I wonder **how long** it takes between each stop. How could we figure that out?
- We rode this train before. This is the stop where we visit the grocery market. What stop comes **next?**

Any Form of Travel

- See the houses and street signs on our trip. What do the **numbers** on the houses mean? Do the numbers get **bigger** or **smaller**? Why?
- That red sign **under** the tree looks kind of like a **circle**, but it actually has **many** sides. I wonder how we can we figure out what **shape** it is?

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On the Go with Math!

Examples of finding math on the go.

On the Bus, Train, or Subway

- Let's find a seat **next to** a window in the **middle** of the bus.
- We have only **two** more stops until we get home. Let's use my watch to time **how long** it takes.
- There were **five** people traveling with us on the subway. **Two** persons just got off. So, **how many** people remain? How did you figure that out?
- We need **one dollar** to ride the bus. There are **four quarters** in one dollar. Let's **count** out four quarters together - 1, 2, 3, 4!

By Car or Bike

- We have **three** more minutes to drive before we get to the park! Let's see **how many** blue cars we can we count until we get there!
- Do you see that red sign **underneath** the tree? It says STOP! The **shape** has **many** sides**.** Let's find a sign with a **different** shape that has **less** sides.
- Our car has **four** tires. Your bike has **half** the number of tires as our car. What number is **half** of four?
- Which do you think moves **slowe**r - a car or a bike?

Any Form of Travel

- **How long** will it take to get there?
- What **shapes** do you notice along the way?

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Math in the Bath!

Examples of finding math at bath time.

Getting Ready

- It's night time, so in **10 minutes** it's bath time.
- Let's turn on some music! You can play during the **first 2** songs while I get your towel ready.
- Okay, **one** song is done. You are **halfway** through play time. **How many** songs do we have left?
- Here is a **big** cup and here is a **small** cup. Which one holds **more** water? Let's guess **how many** times we would have to pour the **small** cup into the **bigger** cup to fill the bigger cup all the way to the **top**.

Washing Up

- Should we start washing your body at the **top** with your head or at the **bottom** with your toes?
- Please put **3** squirts of shampoo **into** my hand.
- I will lather up your hair for **10 seconds**. Help me count that **high: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10! Now let's count backwards!**
- Let's use **5 big** cups of water to rinse off all of the shampoo. Let's count together.
- You're all clean! You may play for **one more** song **before** it's time to get out.

Drying Off

- Bath time is over. I have your towel ready to wrap you up and dry you off. Is the **temperature** of the air in the room **cooler** or **warmer** than the temperature in the bath?
- You're all dry! What comes after bath time? Right, get pajamas!
- Please go get your slippers from **next to** the bed and your pajamas from the **bottom** drawer of the dresser.

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Bathtime Mathtime!

Examples of finding math at bath time.

Getting Ready

- It's almost time for bed! On the **clock,** the **little** hand is very close to the number **8** - and when it reaches the number **9**, it'll be time to take a bath. That's in **five minutes**.
- Choose **three** toys you want to play with during bath time.
- Let's get the water running for your bath. We will use **warm** water and fill the bathtub **halfway full**. How **high** is halfway full in the tub?
- Do you want bubbles in your bath? The **small** pink bottle is bubble bath. Please help me put **two** squirts of bubble bath **into** the water.

Washing Up

- Let's start with your head and wash you from **top to bottom!** Which shampoo should we use? The one in the **tall** bottle or the one in the **long** tube?
- We can use this **big** cup to help rinse you off. **How many** cups do you think it will take to rinse off all of the soap? What is your guess? Let's count to check.
- **First** we washed your head, **next** your arms, and then your back and belly; your feet will be **last.**

Drying Off

- Bath time is over! What **three** things do we do **next?** (For example, dry off, put on pajamas, brush teeth).
- To dry you off we will use the blue towel with the colorful **pattern** on it. What pattern do you see?
- Are you warm enough? The **temperature** tonight is chilly - which pajamas are warmer? The long sleeved pajamas or your shorts pajamas? Let's get them from your **top** drawer.

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Walking About with Math!

Here is an example of a conversation with hidden math, followed by a conversation with the math revealed.

Hidden Math

Adult: We'll get back home soon.
Child: Okay.

Math Revealed

Adult: We have only **two more** blocks to walk until we get back home.
Child: That's so far!
Adult: A block is the **length between** two streets. The block we're starting now ends at the Stop sign. **How many** steps do you think it will take us to get to that sign?
Child: Probably **a million**.
Adult: Hmmm ... **a million** is a really **big number**, and you are right that it is a lot of steps to the sign. Let's count **how many** steps we take to get to the Stop sign. Then, we can use that number **two times** to **estimate** the whole **distance** for the two blocks!
Child: Okay, I'll help you **count**!
Child and Adult: **1, 2, 3 …** That was **12** steps!
Adult: Now, if we walk to that tree **over there**, **how many** steps do you think it will take us?
Child: **12!**
Adult: Let's check by **counting!**
Child and Adult: 1, 2, 3 **… 8! 8** steps to get to the tree!
Adult: **Before**, we walked **12** steps to the Stop sign, and now **8** steps to the tree. Which was a **longer** walk, **12** steps or **8** steps?
Child: **8**?
Adult: When counting, 12 comes **after** 8, so 12 steps is the **longer** walk. 12 is **more** steps. What if we hop instead of walk to the tree? Do you think it will take us **more** steps to walk or hop?
Child: The **same!**
Adult: Let's **compare**! Let's take **4** walking steps, and then go for **4** hops.
Child: **1, 2, 3, 4.**
Adult: That was **4** steps. Now let's hop **back** and count!
Child and Adult: **1, 2, 3, 4, 5, 6! 6** hops!

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Here is an example of a conversation with hidden math, followed by a conversation with the math revealed.

Hidden Math

Adult: Let's take a walk to the park.
Child: Okay.

Math Revealed

Adult: It's a beautiful day! Let's take a walk to the park! We will leave in **10** minutes!
Child: Okay.
Adult: It's a little chilly outside, so remember to get your coat hanging **next to** the **front** door.
Child: Okay.
Adult: Let's see **how many different** flowers we can find on our walk! See the pink flowers **over there underneath** that tree? What flowers do you see?

Adult: Let's take a closer look at the flowers. **How many** petals does each flower have?
Child: 1, 2, 3, 4, 5 - **5!**
Adult: Yes! You used your counting to find that there are **five** petals on **each** flower. There are more flowers **behind** that fence.

Adult: The flowers make a **pattern** - red, yellow, red, yellow! What else is in the garden pattern?
Child: White flowers!
Adult: Yes! The white flowers are the **tallest flowers; which are the next tallest** flowers? Which are the **shortest?**

Child: Hey! I see the playground!
Adult: Yes, indeed! The park is right up **ahead** of us! How many steps will it take us to get there?

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Setting the Table for Math!

Here is an example of a conversation with hidden math, followed by a conversation with the math revealed.

Hidden Math

Adult: We need forks for dinner. Please put forks out.
Child: Okay.
Adult: Does everyone have a fork?
Child: Yes.
Adult: Okay, please put napkins out, too.

Math Revealed

Adult: We need forks for dinner. Please put **one** fork at **each** plate. **How many** forks do we need to have **one** fork at each plate?
Child: 1, 2, 3, 4, 5, 6 *(counts plates on the table)*
Adult: That's right, we need **6** forks so that each plate has one. Now, please put **one** fork **next to** each plate.
Child: Okay, 1, 2, 3, 4, 5, 6.
Adult: Great! Thanks! Now we need the **same** number of napkins as forks. So, **how many** napkins do we need?
Child: 4?
Adult: Well, we have **6** forks, and **4** is **less than 6**. If we put out **4** napkins, **2** people will not have a napkin. So we need **6** napkins. Let's get **6** napkins from the drawer **next to** the refrigerator.
Child: Okay.
Adult: We have **two** colors of napkins - red and blue. Let's make a **pattern** with the napkins as we put them **under** each fork. Let's start with red at the **first** plate and then blue at the **next** plate and continue the pattern… red, blue … What comes **next?**
Child: Red! Blue!
Adult: Yes! We now have **6** forks **on top of 6** napkins in a **pattern**! We are ready for dinner! Thank you for helping to set the table!

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Lotería Math!

Here is an example of finding math in a family game.

Adult: Let's play "**Lotería**." The **first** thing we do is make sure each person takes just **one** of the **large rectangular** tables.
Child: What do I do with my table?
Adult: You'll keep the table **in front of** you. See all the **squares** with pictures in them? **How many** squares are in the **first** row going **across** the **top**, this way (*pointing)?*
Child: 1, 2, 3, 4!
Adult: That's right! And, if we look **down** this **column** here (*pointing)*, **how many** pictures are there along the side?
Child: 1, 2, 3, 4!
Adult: Right, so there are **4** rows going **across** the table *(1, 2, 3, 4)*, each going left to right; and **4** rows going **down** the table, from the **top** of the table to **bottom** *(1, 2, 3, 4)*. So each table has **16** pictures!
Child: What are the pictures for?
Adult: Good question! The pictures are for matching. We take turns picking one **small** card from the **top** of this card deck, and reading the riddle on the card. **Then** we look at our table to see if we have a picture of what goes with the riddle.
Child: What if I have the picture?
Adult: If you have the picture, you take **one** of these beans from this **big** pile of beans, and put it on the picture square that matches. We play until someone has **4** beans in a **row**, either going across from left to right, or going down from **top** to **bottom**.
Child: Can I take a card?
Adult: Yes, please pick the **first** card from the **top** of the deck. It says, "The Crown: The hat of kings." Do you have a picture that matches this card?
Child: Look! This picture is a crown!
Adult: Great! You found the match! Your match is the **second** picture in the **third row**, see? Now it's *my* turn to take a card!

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Countdown to Bedtime!

Here's an example of a conversation with hidden math, followed by a conversation with the math revealed.

Hidden Math

Adult: It's time to get ready for bed. Remember to brush your teeth and find a bedtime story.
Child: Okay.

Math Revealed

Adult: Look at the clock, here is the number **8**. That means it is **8** o'clock. What happens at **8** o'clock?

Child: I don't know, what?

Adult: **8** o'clock at night is bedtime. So, let's get ready for bed. Bedtime has **3 steps**. What is the **first** step?

Child: Pajamas!

Adult: Yes, putting on pajamas is the **first** step. Since you are **older than** your sister, you can put on your own pajamas while I help her change.

Child: Okay, I put on my pajamas!

Adult: Great! You are **both** in your pajamas! Now, what do we do **second**, **before** story time?

Child: Brush teeth!

Adult: Good remembering! Let's set the timer for **2 minutes**. We'll brush the **top** teeth **first**, and the **bottom** teeth **last.** Be sure to get all the way **back** to your **biggest** teeth, too.

Child: Okay!

Adult: **Now** the **third** step is story time. You may choose **4** books while I help your sister brush her teeth, then **all three** of us will read together **before** bed.

Child: This many books? **1, 2, 3, 4**.

Adult: Yes! You used your **counting** to find **4** books. Time to read!

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Hidden Math

Adult: Time for bed.
Child: Okay.

Math Revealed

Adult: It's just about bedtime. **First** let's brush our teeth, and **then** let's put on our pajamas.

Child: Okay.

Adult: Here is your toothbrush. We need to squeeze on enough toothpaste to cover the bristles of your toothbrush. That's about **one inch** of toothpaste.

Child: Okay. Like this?

Adult: Yes! Now, we brush for **2** minutes. We can use this sand **timer.** Keep brushing until all of the sand runs from the **top** to the **bottom** here. **Then**, when all of the sand is at the **bottom**, you can stop brushing.

Child: Okay. I'll flip it over!

Adult: Great! Nice brushing. You got all of your teeth - **front, back, top, bottom**! What's **next?**

Child: Pajamas!

Adult: Yes, pajamas! Please go get your pajamas from the **bottom** drawer **next to** your bed.

Child: Okay! And **then** can we read books?

Adult: Yes! Let's pick out **three** books to read together.

Child: How about these? **1, 2, 3!**

Adult: Nice! You picked **three** great books. Let's read! Which one do you want read **first?**

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Fishing for Math in Play!

Find the hidden math while playing "Go Fish"

Hidden Math

Adult: Let's play "Go Fish."
Child: Okay!

Math Revealed

Adult: Let's play "Go Fish." I'll teach you how.
Child: Okay! How do we play?
Adult: To play "Go Fish," you look for **pairs** of cards that match!
Child: What's a **pair**?
Adult: I'll show you. In this game, a **pair** is **two** cards with the **same number**. You can check the **number** on the **top** corner of the card, or you can **count** the pictures on each card to see if both have the **same number** of hearts, clubs, spades, or diamonds.
Child: Okay!
Adult: To play, **first** we each get **7** cards. I will give us **7** cards each, **one** at a time, like this: **One for you, one for me; two for you, two for me** *(continues to five)*; So far, we each have **five** cards. **How many more** cards should I deal so we each have **7**?
Child: **One?**
Adult: Let's see, we have **five** cards; now I'll give you **one more** and me **one more**; **6, 6.** Do we each have **7 now**?
Child: *(counts cards)* No, we only have **6**.
Adult: Okay, **one more** makes **7**. So **five** and **two** more is **7**. Now we each have **7** cards. **Next**, let's see if we have **pairs** of cards that **match**.
Child: I don't have any that are the **same**.
Adult: That's okay! To play we take turns asking each other for cards to try to make **pairs**. When you do find a **pair** of cards with the **same number,** put the pair **on** the table **in front of** you. **After** all the cards are gone, we'll count **how many** pairs we each have **on** the table. The one with the **most** pairs wins! Ready to play?

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Folding Math into Laundry Time!

Here are some examples of how to add math to laundry time!

Before Washing

- Clothes need to be washed with similar colors. Let's **sort** the clothes **by color** and put light clothes in the **square** bin and dark clothes in the **round** bin.
- The towels can be washed with **warm** water. Let's make a separate pile just for towels.
- This is a **big** load. The instructions say, for a **big** load, fill the cup with detergent up to the number **4**. Let's find the number **4** on this cup.
- Each load of wash costs **one dollar**, and we have to use quarters. **Four quarters** is the **same** as **one dollar**, so we have to put **4** quarters into the machine: **1, 2, 3, 4.**
- This load will take **40 minutes** to wash and then we'll move the clothes to the dryer. We'll set a timer to be sure we remember to switch the clothes.

After Washing

- The clothes in the dryer are done! **Now** we need to **sort** the clothes. How can we tell which clothes are yours and which are mine? Yours are **little** and mine are **big**. So let's put your clothes in the **smaller** bin and mine in the **larger** bin.
- We have to **match** the socks! When you fold socks, you have to find **2** that are the **same**. See, these **2** are the **same size** and **both** have red stripes. The stripes make a **pattern.**
- Let's **sort** our clothes **by type** so they're easier to put away. We'll have separate piles for pants, shirts, pajamas, underwear, and socks.
- You have blue shirts and I have blue shirts. Which of us has **more** blue shirts?

UNIVERSITY OF MINNESOTA
Driven to Discover®

Reveal the Hidden Math

Math is everywhere!
Here are some ways to find it.

Notice the math

In daily conversations when you see or talk about:

- Numbers and Counting
- Shapes, Space and Location
- Patterns
- Measuring
- Adding and Subtracting

Talk about the math

Talking about math may help build children's math vocabulary and their mathematical thinking.

Model and Praise problem solving

Talk out loud to show how you solve a math problem. You could say, "*There's one for you, one for me, and one for Ashley, so that's 3*!"

Focus on your children's problem-solving instead of whether they are right or wrong.

Offer specific praise for your children's effort. You can say, "*You're really figuring that out!*"

Ask questions

To encourage deeper thinking, ask questions like, *How can we figure it out? What's another way we can try? What do you notice? What is the same? What is different? Tell me what you are thinking!*

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MATH & NUMERACY LAB

Keep Children Coming Back…
for More Math!

Here are some examples of "assignments" that keep children busy and encourage mathematical thinking while you work!

- I wonder **how many** steps it is if you walk up to your room and back here. **Count** your steps and tell me **how many**! (*Child counts and returns*) Now let's see **how many** steps it is from here to the kitchen. (*Child counts and returns*) Which room is **farther** away? Your brother has **shorter** legs, so I wonder if the number of steps he takes will be **more or less**. Go find out together!

- Oh my! We have so many empty boxes to recycle. Go find the **biggest** box. (*Child returns)* Now find the **smallest** box. (*Child returns*) Now work with your sister to find **how many** boxes will fit **inside** the **biggest** box.

- There are a lot of shoes by the door! See if you can find out who has the **most** shoes. (*Child returns*) Figure out **two** ways to **sort or arrange** the shoes, then come tell me.

- Here is a **ruler**. See the **7** here? From the start of the **ruler** to this **7** is **7 inches long**. Go around the room and **measure** things and tell me when you find something that is **7 inches long.** [*Child measures items. When child returns, repeat with other rooms, or different lengths.*]

- Let's look for **patterns** today. Find a shirt with a pattern and bring it to me please. (*Child returns*) This towel has an **alternating pattern**! See if you can find another type of pattern or different alternating pattern.

- Here are some markers and paper. Draw as many **shapes** as you can think of; then make sure you draw **3** of each. Tell me about your shapes when you're done.

- It's time to put this pile of books back on the shelf. Please put this book on the **bottom** shelf. (*Child returns*) Now please put this one on the **middle** shelf.

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Finding Math Outdoors!

Examples of finding math while playing outdoors.

- It's such a beautiful Autumn day! Let's get outside! The leaves are falling. They are all **different sizes** and colors. Which tree has the **biggest** leaves? Which tree has the **smallest** leaves?

- Let's collect sticks and line them up from **shortest** to **longest**.

- I see you are making a fort with the sticks. Will it be **big enough** to **fit** your toy car **inside**?

- Wow! That rock is really **big**! And this rock is really **small**. Which one do you think **weighs more**? Which one do you think will roll **down** the slide the **fastest**? Let's roll them down and see!

- There are many **different** colored leaves. Let's collect leaves and make **patterns** with the colors! I'll make one first: red, yellow, red, yellow! Now it's your turn to make a **different** pattern.

- Which tree do you think is the **tallest**? Which tree do you think is the **shortest**? Which bush do you think is the **widest?**

- Here's some chalk. Let's draw a picture on the sidewalk. We can start by drawing some **shapes**! **First**, draw a **circle**. **Second**, draw a **square**. And **last,** draw a **triangle**. Now, what pictures can you make from those shapes?

- Let's see **how long** it will take us to walk **around** the whole playground. We can use my watch to **time** us! Ready…? Go! Wow! Now, let's see how long it will take us to go around **3 times**!

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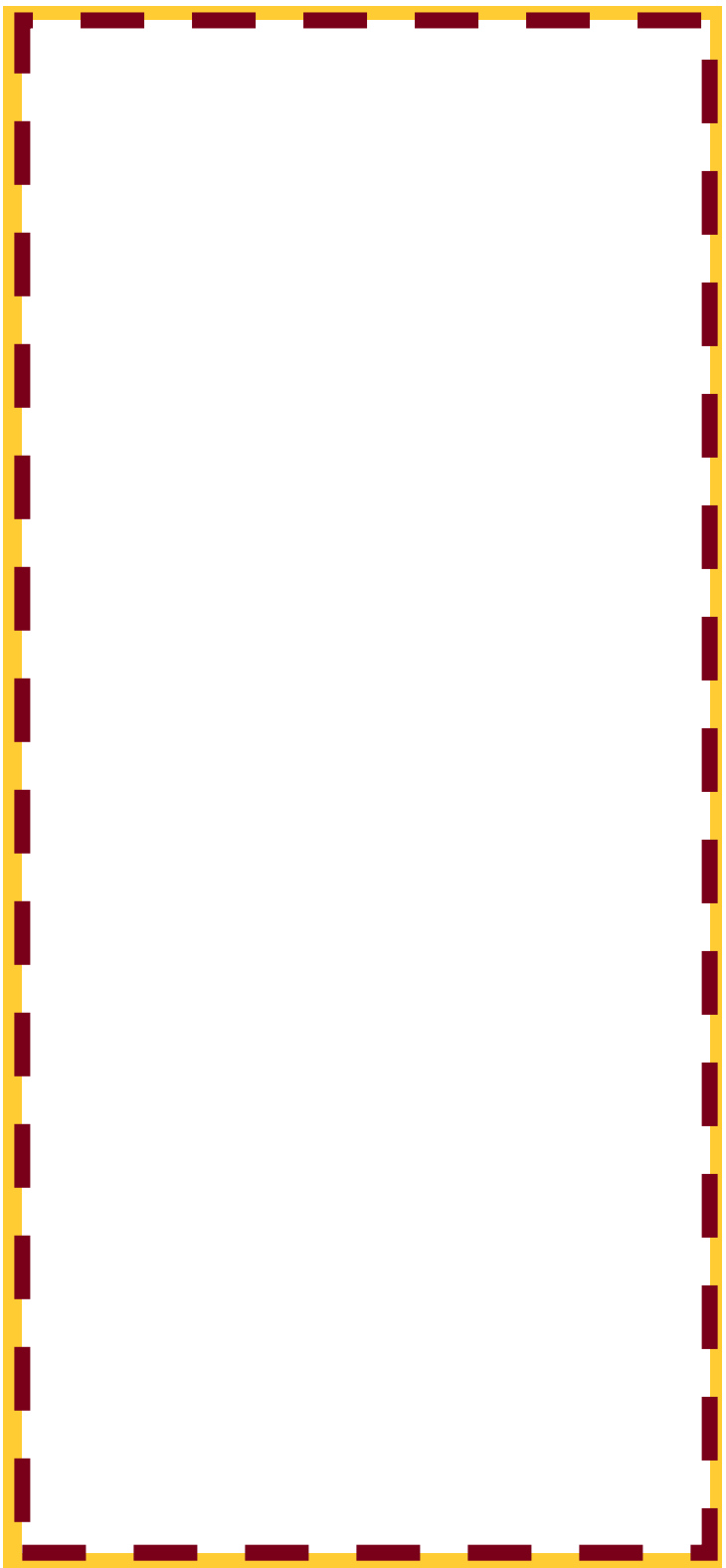

Kitchen Math!

Examples of finding math in the kitchen!

- Let's make lunch together! If we **each** need **two** slices of bread for our sandwiches, **how many** slices of bread will that be?

- Would you please help me set the table with plates, forks, and napkins? Be sure to **count** out the **same** number of each.

- Let's cut this apple in **half,** and then in **quarters**. That will give us **8** apple slices to share. **How many** apple slices will we each get then?

- Let's make a salad with **three** different colors of vegetables in it.

- **How many** blueberries do you think we can fit in this **little** cup? Which could we fit **more** of in this **medium-sized** cup - strawberries or blueberries?

- We need **one** cup of sugar for this recipe. Let's **measure** one cup together.

- The cookies need to bake for **15** minutes. Let's set a timer to check them in **10** minutes. **How many more** minutes will we need **after** that?

- Do you think our leftover soup will fit **into** this container? **How many** ladles of soup do you think it will take to **fill** the bowl? Let's **count** together!

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MATH & NUMERACY LAB

Grocery Store Math!

(for children of all ages)

Reveal the Hidden Math

Notice the math.
Talk about the math.
Model & praise problem solving.
Ask questions.

Arrival

- To get back home in time for dinner, we need to be done shopping in **45 minutes**.
- **First**, let's get some fruits and vegetables, **second**, let's get bread and cereal, and **last**, let's get milk.
- We need to buy **4** things, should we get a **small** basket or a **big** cart?
- You and your brother can take turns pushing the cart. You push down **one** aisle, **then** he pushes down the next aisle, and we'll **repeat** that **pattern** until we checkout.

Produce Section

- Which is the **biggest** spaghetti squash you see?
- Pick out **2** different kinds of berries.
- We need **3** pounds of potatoes. **How many** potatoes do you think that will be? Let's **weigh** them to check your guess!
- If everyone in our family gets to have **2** apples, **how many** apples do we need?

Packaged Goods

- There is a **tall** box of cereal and a **short** box. Which one has **more** cereal inside? It will last us longer.
- The **small** boxes of raisins are on the **bottom** shelf. Please get **one** package of **6** boxes.
- There are **2** kinds of oatmeal. One is in a **cylinder** container with a **circular** lid, and one comes in a box with a **rectangular** lid. Please find the **cylinder**.
- There are so many kinds of nut butter! Help me find the best deal by looking at the **price per ounce.**

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Grocery Store Math!

Refrigerated/Frozen

- We need a **dozen** eggs, a dozen means a set of **12**!
- We will get a **gallon** of regular milk and a **half-gallon** of chocolate milk. We need **twice** as much regular milk as chocolate milk, because we use it more often.
- Find a package of fruit popsicles with enough for you to have **one every day** this week.
- Which do you think is **colder:** milk or ice cream? Do you think the **temperature** of milk is **higher** or **lower** than the **temperature** of ice cream?

Checkout

- **How many** different **shapes** are in our cart?
- We can use the Express Lane if we have **less than 12** items. Let's count **how many** items we have.
- While we wait in line, let's **sort** our groceries into what needs to go in the freezer, the refrigerator, or the pantry. That way it will be **faster** to bag our groceries and easier to unpack at home!
- There are **3** lines. **How many** people are in each line? Which line do you think will move the **fastest**?

Write Your Grocery List Here!

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Grocery Math!

(for children of all ages)

Reveal the Hidden Math

Notice the math.
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Arrival

- We have **many** items on our grocery list, so let's get a cart for our shopping today.
- This flyer will tell us what items are on **sale** and cost **less** than normal.
- We will use these coupons to help us **save money**. Some of the coupons can be **doubled.** That means that we can save **double** *(two times)* the money.
- Wow! Look at that display. They made a **pattern** with the **different** types of potato chips.

Produce Section

- There are **3 different** colors of peppers. Let's find a **medium-sized** pepper of each color.
- Please pick out the **largest** melon that you can find.
- We need bananas. **How many** bananas do you think there are in **two** pounds? Let's **weigh** the banana bunch to check your guess!
- If you take **one** pear to lunch for each day of school this week, **how many** pears will we need?

Packaged Goods

- This rice comes in a **rectangular** box, and this one in a bag. Which package has **more** rice?
- The **large** container of applesauce is on **bottom** shelf. **Above** there are **small**, **single-sized** containers. Which is the best deal? Let's look at the **price per ounce** to help us decide.

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Grocery Math!

Refrigerated/Frozen

- We need eggs. They are sold by the **dozen**. **How many** eggs are there in a dozen? Let's **count** to see.
- Brrrrr! The **temperature** is very **cold** in this section! This is where we get our ice cream. We have a coupon that says "Buy one, get one free of the **same value**" - which items are the **same price**?

Checkout

- Which line do you think is the **shortest? Longest?**
- **How many** bags do you think we will need to use?

Write Your Grocery List Here!

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