

Tallies Tell It All

Summary

Students will learn about tallying and collecting data.

Main Core Tie

Mathematics Kindergarten

[Strand: MEASUREMENT AND DATA \(K.MD\) Standard K.MD.3](#)

Additional Core Ties

Mathematics Kindergarten

[Strand: COUNTING AND CARDINALITY \(K.CC\) Standard K.CC.1.](#)

Mathematics Kindergarten

[Strand: COUNTING AND CARDINALITY \(K.CC\) Standard K.CC.4.](#)

Mathematics Kindergarten

[Strand: COUNTING AND CARDINALITY \(K.CC\) Standard K.CC.5.](#)

Materials

- [Class Anecdotal Record sheet](#) (pdf)
- [Individual Anecdotal Record sheets](#) (pdf)
- Rubber math manipulative vehicles
- Magnet strips
- Laminated [Class Tally Chart](#) (pdf)
- Dry-erase markers
- 5 meter sticks
- Used games (e.g., Lucky Duck, Monster Mixup, etc.)

For each student:

- Whiteboard
- Whiteboard eraser or fleece square
- Piece of card stock for palm pocket
- [Number Cards](#) (pdf)

Additional Resources

Books

- *Beginning Graphing*
, by Eleanor Villalpando (available from Remedia publications, <http://www.rempub.com/stores>); Item# REM 152
- *Beep, Beep, Varoom, Varoom*
, by Stewart J. Murphy; ISBN 0-06-446728-7

Background for Teachers

Students should have a basic knowledge of numbers and one-to-one correspondence before they start working on these activities. Vocabulary words used in this activity:

Tally mark—A line made on a chart to represent an object in a set.

Tally chart—The chart on which tally marks are recorded.

Set of five tallies—The fifth tally goes across the first four tally marks to show a set of five marks.

Set of ten tallies—Two sets of five tallies get circled to show a set of ten tally marks.

Data—Information we are using, either from around us or generated by us.

Attributes—The properties of an object that can be used to compare it to other objects.

Intended Learning Outcomes

1. Demonstrate a positive learning attitude.
2. Develop social skills and ethical responsibility.
3. Demonstrate responsible emotional and cognitive behaviors.

Instructional Procedures

Invitation to Learn

Have everyone close their eyes for a minute. Tell them that we are in a store and we are walking down the game aisle. Ask them what they see. Tell them that what you see are manipulatives for math—box after box of manipulatives that can make math really fun and interesting for students. The problem? Those games have big prices stuck on them and we can't afford to buy them. Tell the class that you are a garage sale and secondhand store addict. Tell them that usually you can buy a game for \$2 or less at a garage sale or a second-hand store. Tell them that those games will probably never be played following the rules of the game.

The following game ideas use second-hand items and can be adapted for games that are available to the teacher.

Push the grasshoppers down and wait for them to pop up. Have a student come and check whether they landed right-side up, or up-side down. Ask a couple of students to come up and try to catapult the monkeys into the tree. Ask another student to come and push the button on the Monster Mixup machine. Have another turn on the Lucky Ducks game and start pulling ducks from the pond one at a time, etc. . .

Ask the students what the students have been doing. Guide their conversation so that you establish the fact that all of the students have been generating data. Then ask what we can do with the data that is being generated. How can we collect, record, and display that data? Make a list on the board of the different ways that the students suggest.

Instructional Procedures

Have students sit around you on the floor. Place a number of cars, trucks, vans, etc. on a whiteboard. Ask the students how many vehicles are on the board. Starting from the upper lefthand side of the board, have them count the vehicles with you as you point to each one. After you have counted all of the vehicles, continue counting by starting over—pointing at the same vehicles again. When a student gets excited about the fact that you are doing it all wrong, stop and review with the children that when we count objects in a set we only count each item once. Count the vehicles again. This time stop after each item has been pointed to and counted.

Tell the students that we are going to make a record of what we have on the board.

Hold up a big tally sheet for them to see. Show them that there is a row on the sheet for each different kind of vehicle that is on the board.

Invite a student to go to the board and remove one of the vehicles. The student needs to show everyone which vehicle s/he removed and then give the vehicle to you.

Show the students that you are making a tally mark on the tally chart on the row that shows the picture of the vehicle the student removed from the board. Make sure the students understand that the tally mark on the sheet represents the vehicle that was removed from the board. As you get to a row where a fifth tally needs to be recorded, choose five students to come up and represent the tally marks with meter sticks. Have four students lay their meter sticks on the floor side by side so they look like the four tally marks on the chart. Have the fifth student lay his/her meter stick across the other four so that it touches all of the other meter sticks. Let the rest of the students in the class circle around the tally mark model so that they can see that the fifth

tally goes across the first four.

Mark the fifth tally across the other four on the tally chart. Show the students that it can go straight across like this, (mark four tallies on the board make the fifth tally go across the other tallies at the middle point). This way seems to be easier for kindergarten children to make, or it can go diagonally across the other tallies from either side like this (mark four tallies on the board and show that the fifth tally can go diagonally across the four starting from either side). The fifth tally going across the other four makes it very easy to recognize sets of five tally marks. When the students see a set of five tallies, they should call it five. The children also need to be shown that we leave a little space after a set of five before starting a new set.

Since kindergarten children are not very adept at counting by fives, it is good to circle the sets of five every time you have two sets together so it looks like this . Two sets of five circled together make a set of ten. Every time the children see the two sets of five circled, they can call it ten.

Ask the students to pick up a whiteboard, a marker, and a fleece square (eraser), and return to their places. Tell them that we are going to practice making tallies using a whiteboard. Mark the tallies that represent the number five. Ask the students to make a set of five tallies on their whiteboards, then write the number that the tallies represent. Have them turn their board so that you can see it. It is easy to give each child a quick thumbs up if they have done it right, or help if they need it.

After the children have written the number a few times, tell them that you are going to write a number and they have to mark the tallies that represent the number that you write. Write the number 9. Check the boards to make sure that the children made a set of five tallies, then a space, and then four more tallies. Have the children erase their boards, then practice by giving them other numbers.

Ask the students to pick a partner. Let them practice doing their tallies with just the two of them. One student will write a number on his/her board and the other student has to make the tally marks that the number represents. After a few minutes, have the students trade so they both get a chance to write the number and make the tally marks. Ask the students to put their whiteboards, markers, and fleece squares back where they belong and move to their tables.

If needed, demonstrate how to make a palm pocket. Ask the students to get their palm pockets, and a set of [Number Cards](#) . Have them lay the numbers out in front of them so that they can see all of the numbers. Tell the students that you are going to make some tally marks on the board. They need to count the tally marks, find the number that the tally marks represent, put the number in their palm pockets, and then turn the palm pockets so that you can see the number they selected. Make tallies for all of the numbers 1-10. When there is a set of five, make sure the children count five for the set and then count on from there (5, 6, 7, 8 etc.). Have students put their numbers in order to check and make sure that they have all of them and then have them put their number cards and palm pockets away.

Extensions

Provide ideas for integration with other curricular areas.

Have the students tally during centers.

Center 1:

You will need a set of cards with tallies on them representing the numbers 1-20. Place the cards face down on the table. Each student at the table will need a laminated fish-shaped storyboard and a portion cup of goldfish crackers. Have a student turn over one of the cards. Everyone looks at the card, determines the number the tallies represent, and counts that many goldfish onto their fish storyboard. The fish are returned to the cup and another student chooses a card. The children continue to turn over the cards and count out the number of fish for the number the tallies represent. At the end of the rotation, the children get to eat the fish and the adult helper wipes all the

storyboards with a baby wipe so they are clean for the next group.

Center 2:

Have this table set up with sorting trays that have four different kinds of coins in the main area. Use plastic pennies, dimes, nickels and quarters. Have each of the children sort the coins into the divided areas of their tray. Then each student gets a tally sheet showing the front and back of each of the coins. Model for the students just what they need to do to make the tally. Show them that the pencil can stay in the hand they use to write with and then they need to use their other hand to move the coins as they tally them. The coins can be put back in the main area of the sorting tray as they are tallied. To clean up this table at the end of the rotation, the children must have all of the coins back in the main area of their tray and they need to put their tally sheets in their desks at their starting table.

Center 3:

The students at this table will each have a container with about 15 beans in it. They are to reach into the container, pull out a number of beans, and put the beans on a foam square. Then they will tally the number of beans they pulled out of the container, using the hand they write with to make the tallies on the record sheet and the other hand to return the beans to the container. After all the beans are tallied, they count the tally marks, write how many beans there were, and circle the number. Then pull beans from the container again and start a new tally. At the end of this rotation, all the beans need to be back in the containers and their tally sheet needs to be put in their cubbies.

Center 4:

Have a grocery store set up in this area with a number of foods that come in different kinds of containers. Have a tally sheet showing cans, packets, boxes, and bottles. Have two children fill their carts with 10 items they choose to buy. The other two children will check them out at the cash register. Have the students who were shopping place the items from their carts up on the counter. One of the check-out children pretends to scan the item and puts the item into a bag. The other student has to put a tally on the record sheet for each type of item purchased. Then have the check-out people trade places before the second grocery cart is emptied. After both carts have been tallied and bagged, have the students trade places so the other two students can have a turn shopping.

Center 5:

This center will be set up with a grasshopper for each student and a tally sheet showing a picture of the grasshopper right-side up on one line and a picture of the grasshopper upside down on the other line. Have the students push down on their grasshopper to get them to hook to the table. After it jumps and lands, have them determine whether the grasshopper landed right-side up or upside down. Have the children put a tally mark on the chart on the right line. Push the grasshopper down and let him take another flying leap, and repeat the whole process again.

As the children are doing these activities, monitor and record who is able to put one tally for each object that is counted. Who understands that the fifth tally goes across the first four to divide the tallies into sets of five, and who can circle groups of two sets of five to make a set of ten. You can also note who is having trouble with these concepts. It is really just one-to-one correspondence. One tally for each object they see that they can mark on their chart.

With all of the children busy in centers, it gives you a chance to provide help to students who need it. It also gives you a chance to see and pull out those who may need more challenging activities. Some activities the more advanced students may enjoy are:

Put name tags on the students. Give each student a record sheet showing four rows. Let each child choose a letter to put on each row. Have them walk around the room and mark a tally on their chart for each time they see one of their four letters on a name tag.

Have children take inventory of your store center. Give them a clipboard with a tally sheet showing six different items and have them mark how many of each of those there are in your store center.

Family Connections

The children can tally the silverware as it is taken from the silverware basket in the dishwasher and put into the drawer. • The children can make a tally of the different places the items purchased at the grocery store need to go to be put away.

As they help with the laundry, students can tally the number of items that need to go to each room.

Each week, students make a tally of the things their family does for entertainment.

Assessment Plan

Assessment for this skill is done by the teacher observing the students' behavior and actions during the work time. Note if the students are making one tally mark for each object that is being tallied. Is every fifth tally mark being placed sideways across the first four, making sets of five tallies? Are every two sets of five tallies being circled to make sets of ten?

Note observations on record sheets kept on a clipboard. There are [Class Anecdotal Record sheets](#) and [Individual Anecdotal Record sheets](#) to assist with assessment. The *Individual Anecdotal Record* can be kept in the child's individual file so they can be shared with parents during conferences. They can also be used to log individual growth doing this task.

Bibliography

Research Basis

NAEYC, Bredekamp, S. & Copple, C., Eds. (1997). *Developmentally Appropriate Practice In Early Childhood Programs*. Revised Edition.

"To help children learn and develop, teachers use a variety of active, intellectually engaging strategies. . . teachers also model, demonstrate and explain, and provide information, coaching, direct instruction, and other assistance that a child needs to progress (pg 165)."

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