

Place Value is as Easy as Pie!

Summary

Place Value is a difficult concept for students to understand. This activity provides a basic hands-on introduction to place value.

Main Core Tie

Mathematics Grade 2

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(2.NBT\) Standard 2.NBT.1](#)

Additional Core Ties

Mathematics Grade 2

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(2.NBT\) Standard 2.NBT.3](#)

Materials

Small counters

Cherry Tree chart

Place Value Dice

- [Race for the Pie](#)

- [Cherry Cards](#)

(100s, 10s, 1s)

Twenty suction cup hooks

Portion cups, paper cups, pie tin

- [Cherry Game Board](#)

Additional Resources

Books

- *Math Fables*

. Tang, G. (2004). Scholastic Press. (0439453992)

- *Math Appeal*

. Tang, G. (2003). Scholastic Press. (0439210461)

- *Making tens: Groups of gollywomples (math monsters)*.

Burnstein, J. (2003). Weekly Reader Early Learning Library. (0836838122)

Background for Teachers

Each teacher will have a representation of a cherry tree that they will use to model the concept of place value. Cherries will be placed on the cherry tree for students to pick and regroup. The tree can be used as an ongoing activity to practice place value and regrouping. The tree can be used for whole group, small group or math center activities. As students become proficient with the basic concepts of place value, the activity can be used to model more difficult skills.

Place Value is a difficult concept for students to understand. This activity provides a basic hands-on introduction to place value.

Intended Learning Outcomes

1. Demonstrate a positive learning attitude.
5. Understand and use basic concepts and skills.

Instructional Procedures

Invitation to Learn

Provide each table with a set of small counters and instruct them to develop a counting strategy and record it in their math journal or tell it to a friend. Ask specific questions. "Could we pick up quickly where we left off if we had to stop counting and go out to recess? What if we put two groups together? Which counting strategy would be most helpful?" (If students can't agree on a strategy try some out.) These types of questions will help guide students to select groups of 10 for their counting strategy, but it is more powerful because the students are the ones making the decision.

Instructional Procedures

Introduce the lesson by telling the students that they will be hearing a story about a boy named Chett who learns the importance of using place value.

Read the story [Race for the Pie](#) aloud to the students.

Model the skill by having students help you count Chett's cherries using the Cherry Tree chart. Teacher can place as many 1s [Cherry Cards](#) as desired on the tree the first day. Use the Cherry Tree chart to practice counting and regrouping. Using the 1s Cherry Cards, pick ten cherries and group them into a ten. Show this grouping by exchanging the ten cherries for a 10s card. Repeat this process by having the students continue to regroup the ones cherries and exchange them for a 10 card and the tens are exchanged for a 100s card. When the students have exchanged ten 1s for a ten card, punch a hole in the center of the tens card and hang it on one of the hooks (continue to hang the cards as far as you want to count with students). Teacher could draw a basket to represent the tens and a bushel basket to represent the hundreds on the board to put the hooks in. Ten hooks in the basket and ten hooks in the bushel basket.

Play *Race for the Pie*--Separate students into small groups and give each group a set of small portion cups and small counters to represent cherries (e.g. bingo chips). Have students separate counters into groups of tens and place into small portion cups. The ones will remain separated. As a whole group, combine tens to make hundreds. For every ten portion cups, place them into a large cup to represent a hundred. Place ten 100 cups into a pie tin to represent 1000.

Following the Race for the Pie activity introduce the place value dice. Roll the dice and build the indicated number on the Cherry Chart using the cherry cards. Show students how to write the number.

Provide students with a copy of the [Cherry Board](#), place value dice, and small counters (e.g. Red Hots, dried cherries). Instruct the students to roll the dice and place their counters on their tree to represent the number they rolled.

Extensions

Curriculum Extensions/Adaptations/ Integration

Extensions can be made by having students build numbers to the thousands place.

Students with special needs could be given extra practice, more individualized help, or work with a buddy.

- [Cherry Challenge Game](#)

--Match cherry to correct pie tin

In a journal have students create a story using their own counting strategy.

Family Connections

Following the Cherry Board activity, invite each student to take their game board home to practice with their family. Teacher could provide Red Hots, dried cherries etc. for students to use as counters.

Assign each student a number to take home and build a visual representation using objects from home. Invite them to share with the class.

Assessment Plan

Place Value Ladder Book-Create a ladder book. Each scaffold should include various number representations (e.g. Create the number _____ using numbers, pictures, or words).

- [Place Value Questions](#)

Bibliography

Research Basis

Cotter J. (2002). Using language and visualization to teach place value. *National Council of Teachers of Mathematics*.

Recognizing and replicating patterns contributes to the success of being able to determine how many objects there are without having to stop and count each one individually. Manipulatives create a visual of the base ten number system that enables students to visualize the quantity when the manipulatives are no longer used.

Schmidt, M.E. (1995). Mathematics intervention: Second grade place value concepts. *Education* .Volume 116 (Issue 2), p.229.

Second graders who are in need of remediation are able to reach criterion of the second grade place value objectives. This can be accomplished by involving them in place value games and activities that meet their appropriate levels of understanding.

Authors

[Utah LessonPlans](#)