

Unit 5  Week 1	Small Groups: Making Tall Trees* High Support	Math SG 2	Standards: MELDS.M.MP.PS.5 MELDS.M.OAT.PS.3 MELDS.M.OAT.PS.4
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Image downloaded from Amazon.com

Guiding Math Ideas:

- Quantity- Reinforcement of All Related Concepts
- Beginning Composing and Decomposing Numbers, Finding Number Partners
- Patterns- Adding Complexity
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Math Concepts from Unit Learning Progressions:

- Drawing or describing how number names relate to groups of objects or living things.
- Beginning concepts of Adding- Varying ways of Representing
- Numerals communicate math ideas we can “read” and use to solve problems. (Unit 6)
- Counts groups and begins to compare numbers(< > +=)
- Finding numbers inside of numbers (Composing/Decomposing numbers) (Unit 6)

Materials:

- *Tall Tall Tree* by Anthony Fredericks
- Playdough balls, one per child
- Bamboo skewers
- Plastic, multi-colored straws- See Preparation for size.
- Unifix Cubes [Optional]
- Three-dot die
- Equation Cards- Teacher Materials

Math Vocabulary:

- Add: Put numbers together to make other numbers
- Equal= When a combination numbers together are the same as another number.
- Number partners: Finding smaller numbers “inside” bigger numbers.

Preparation:

Cut the pointed tips off of the bamboo skewers for safety.

Choose 4 colors of straws. The example in Teacher Resources uses Pink, Green, Blue and Yellow, but adjust for your straw colors. Cut them into pieces approximately 1 inch long.

Test to make sure that your straws are the right size to slip easily onto the bamboo skewers. You may need to buy jumbo straws.

Use Number dot cards from Teacher Resources. Use Color Cards from Unit 4 Dog’s Day Colors copy and cut apart for children to match. Operation Symbol Cards are in Teacher Materials Adjust colors as needed to match straws or Unifix cubes..

Alternate: Children can create “trees” using Unifix cubes.

Procedure:

Children will be creating small forests of tall trees, making different “trees” by placing the straw pieces on the skewers. They will be experimenting with the number 5 using different combination of numbers that will equal 5.

Place *Tall Tall Tree* book and all materials on the table.

We are going to make some Tall Trees today.

Give each child a ball of playdough. This is the base for their forest.

We are pretending that this playdough is the forest floor. Spread out or flatten your playdough to make a forest floor.

Here are some “trees”- Count out 5 trees. Children can also count to five using their fingers, or other counting methods

Invite them to put 5 skewers in their playdough.

We are going to build up our trees by playing a game with dice and straws. When you roll a number, you can put that number of straw pieces on your “tree”. When you get to five straw pieces, your tree is done and you can start another tree. If a tree is “full” of 5 straw pieces, just start another tree. You can choose any color of straw [or unifix cube] that you want.

Remember 5 is the most number of pieces you can have on your tree! Let’s Roll!

As children work, “read” the number combinations of their trees together and try to recreate the pattern of color and number.

I see that you have 1 blue, 2 yellow and 2 pink.

For additional challenge, after children have filled their trees, introduce the equation cards. Show them to children and demonstrate.

Let’s change our game a little bit. Here are some cards with numbers on them. Try to make your trees match the number cards, called equations.

Let’s be sure we know what these signs mean: (Children give ideas)

+

This sign means to add things together

=

This sign means that two groups of numbers are the same.

Children draw an equation card and experiment with different combinations of colors and numbers. This is only our 2nd formal math activity that uses equation cards (The first was in our Color Mixing activity in Unit 4), although children have probably been counting on their fingers or using manipulatives to do simple addition. Accept all work, describing what children are doing and noting those children who are beginning to use the operations of addition and the idea of equivalencies. Some children will begin creating accurate equations. Others may randomly place the pieces on the skewers. Support all learners by describing their work and talking about “finding” numbers inside of other numbers. This may be confusing for some, and yet others may have already been doing addition, and perhaps subtraction for many weeks. Equivalences and equations will be integral to Unit 6.

Remove straws and skewers, store playdough in airtight container and place the items in a center for children to use during the Unit.

Strategies to Provoke Math Thinking:

- Number operations up to 5: Limiting equations to the number 5 gives children beginning understandings of how numbers are made up of other numbers (with some exceptions). Remember that many preschool children are not yet ready to manipulate groups of numbers and attach meaning to equations. Introducing the idea of operations and equivalences and helping children become familiar with the + , - and = signs without an expectation of mastery is appropriate.
- Visualizing math: It is crucial for young children to manipulate objects before they can begin to “do math in their heads”. Encourage experimentation of all different types of number combinations, either during center time or with an additional small group during Week 5 or in Unit 6.

Adaptations for Additional Challenge:

- Open up this activity for equations up to 10, if children show interest. Have children create their own equation cards and taller trees.
- Matching Equation Trees: Pair up children to play a more complex game. They can decide ahead of time how tall (how many units) they want their trees to be [Example: 7]. Place a box or other barrier between children who sit on opposite sides of a table. One child rolls the die and begins to create a tree and calls out the color and number for her/his tree. The other child matches this equation with her/his straws. If they roll a number that will make their tree taller than 7 straws, they have to pass the dice. The first one to complete her/his tree wins and they start over.
- See Provocation below for a method for measuring the height of tall things.

Documentation:

- Take pictures of the different combinations of “trees” and share them in family conferences to document children’s growing understanding of number and beginning addition.
- Take notes to help in planning more activities that feature operations and equivalencies. Children **must** master the idea of quantity before equations become meaningful. Continue to provide multiple opportunities for them to gain genuine understandings of quantity. If activities that include equations are frustrating or produce rote answers without understanding, focus on the key concepts of counting. Document these concepts as they build on one another (See Rational Counting Steps). The other concepts will come. You are providing an excellent foundation for Kindergarten.

Provocation:

Measuring trees: Take measuring tapes outside and measure the circumference of trees. Then brainstorm about how we could measure the height of tall trees. Compare the children’s height to the height of a tree and mark with tape or other non-damaging materials.

Tall Tall Trees resources on line describe how to measure tall things using a yardstick. Experiment with this method and see if you can estimate the height of your playground trees (or any structure that is taller than we are). See

https://dawnpub.com/activities/TALL_HIGHER-AND-HIGHER2.pdf

for a lesson plan for older children on how to measure trees and think about adapting for your class.
It's very interesting!

**This activity is a combination of original concepts and ideas and counting and sorting activities found on Pinterest.*