Unit 3  Week 1	***Small Groups: Bucket Balance*** Low Support	**Math** **SG2**	**Standards:** MELDS.M.MP.PS.5 MELDS.M.MD.PS.2 MELDS.M.MD.PS.11

Guiding Math Ideas:

- Language of Math- Comparison Words
- Representing number relationships with toys, manipulatives and puzzles

Math Concepts from Unit Learning Progressions:

- Beginning comparison of groups for more or less (visual estimating/counting).
- Using manipulatives to represent relationships
- Experimenting with measurement: Directly comparing 2 or more items on an attribute
- Growing use of accurate measurement terms

Materials:

- Bucket Balance
- Additional pan balance, bucket balance or scale, if available.
- 1 " cubes, Geometric solids, small assorted toys.
- Paper cups or coffee filters or other lightweight containers
- *Balancing Act* by Ellen Walsh (optional)

Math Vocabulary:

- equal- when things are the same
- heavier- Something that weighs more than something else
- lighter- Something that weighs less than something else

Preparation:

Make sure that the bucket balance and blocks/manipulatives are available during the unit prior to this small group for children to explore and experiment with them. Gather materials in small group area. Add another bucket balance, pan balance, or a scale, if available in your program, in order for more children to participate. Place *Balancing Act* by Walsh, place in small group area as a resource.

Procedure:

Introduce the activity:

We are experimenting with lots of ways to measure things in our classroom. We can measure the wind; we can measure water and rain; and we can measure objects to see how heavy they are. Tools help us measure. Here is a tool called a bucket balance. It helps us see whether things in each bucket weigh the same, which means they are ***equal****. It can also show us which bucket is* ***heavier*** *(weighs more) and which one is* ***lighter*** *(weighs less). We can put things in the buckets to experiment.*

Children play and experiment with the bucket balance. Since only a few children can use the bucket balance at once, distribute the paper cups/coffee filters to the children and encourage

children who are not working with the bucket balance to place items inside them and guess or estimate which cup is heavier. Use additional scales if available.

Strategies to Provoke Math Thinking:

- Representation and relationships are key math *process* concepts (overarching concepts that cross all content areas). Many math problems involve determining whether one quantity is more or less than another in quantity or other attribute, such as weight or volume. See Unit 3 *Where's the Math Teacher Support* document for additional information about the importance of math processes .
- Use naturally occurring questions/problems during your normal routines, such as who has more green beans at lunch, or which truck is bigger or holds more blocks, as opportunities to talk about math relationships.

Documentation:

As children work, write down their observations and comments, noting their use of comparison words and their understanding of measuring, tools and relationships.

Provocation:

Use the block center and any dump trucks or other vehicles that will hold blocks. Encourage children to use their math language as they compare which trucks hold more and which truck would be heavier when it is full of its block cargo.

Measurement tools: Keep in mind that the numbers that are associated with measurement tools can be confusing to children, such as the numbers on a measuring tape compared with the numbers on a measuring cup and the amounts they represent. Give numerous opportunities for children to explore many types of measuring tools.