Frac and Field

Strands:

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Number & Quantity	X
Algebra	
Functions	
Geometry	
Statistics & Probability	

Objectives:
- To write fractions as part of a whole
- To instill the idea of less than and greater than when observing fractions
- To establish a foundation for adding and subtracting fractions
- To understand the concept of a fraction on a number line

Materials Needed:
- Sidewalk chalk
- Painters tape, 2 different colors
- Measuring tape
- Paper
- Pencil
- Paper plates
- String or cord
- Frac and Field records sheet

ACTIVITY:
LONG JUMP:
Set up
- Making the number line: find an unobstructed location with minimal dimensions of 30ft x 6ft.
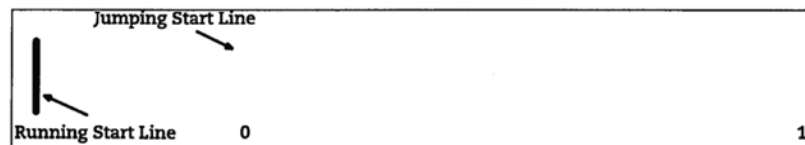
- On the floor, mark the following lines (above)
  - A 2ft length of tape to mark a starting line for running that will be used to measure the length of learners' jumps
  - A 16ft length of cord or tape. This is the number line that will be used to measure the length of learners' jumps.
  - A 2ft length of tape at the 0ft line and perpendicular to the number line to indicate the starting line for learners' jumps.
  - Place tick marks every 2 feet along the number line. Label the numbers 0 and 1 using sticky notes.

How to Play
- The unit or whole that you will use to measure your jump is the length of the number line. The number 0 is represented by the Jumping Start Line and 1 is represented by the end of the number line 16 ft away from the Jumping Start Line.
- Starting running at the Running Start Line. Jump once starting at the Jumping Start line.
- Find the closest tick mark to the place you have landed and assign that place a fraction. For example, if you land on the 3rd mark, you have jumped 3/8 of the way from 0 to 1.

Triple Jump:
- Create another number line as above, this time the line must have a length of 24 feet.
- For small groups, extend the number line used for long jump. For larger groups, use different lines for each event.

Discus Throw:
- Use a 2-ft length of tape to denote a starting line.
- Knot a 32-ft length of string every 4 feet to section it into 8 equal pieces. The string will be used to measure the length of each learner's discuss throw.
- Use a small paper plate of a small pie tin as the discus.

Launch:
- As learners get ready to participate in each event, talk with them about the Olympic, National, and high school records for each event.
- Show students a number line from 0 to 1 (see below). Ask "What fractions can be represented by each number mark? How do you know?"

Where:

Outside	X
Inside	X
On-line	
On-site	

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|----|----|----|----|----|----|----|----|
0                                          1
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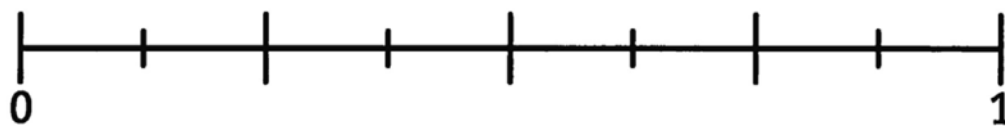
Explore:
- Arrange students into groups of 2 or 3, so there are no more than 6 groups.

On Your Turn:

Long Jump:
- The unit or whole that you will use to measure your jump is the length of the number line. The number 0 is represented by the Jumping Start Line and 1 is represented by the end of the number line 16 feet away from the Jumping Start Line.
- Start running at the Running Start Line. Jump once starting at the Jumping Start Line.
- Find the closest tick mark to the place you have landed and assign that place a fraction. For example, if you land on the 3rd mark, you have jumped 3/8 of the way from 0 to 1.
- Jump two more times and record your score each time on a sheet of paper.

Triple Jump:
- The unit, 1, is represented by the end of the number line at a position 24 feet from the Jumping Start Line.
- Use the same process you did for the long jump, except you will jump three times in succession.
- In your group of 2 or 3, the other student(s) will use chalk or tape to make a mark where you land on each of your first two jumps. So for each triple jump, you will have jumped three times in one try.
- On your record sheet, record each of your jumps as a fraction of the full length of the Triple Jump number line. You will record three fractions for each triple jump.
- Repeat this activity two more times.

Discus Throw:
- The unit is represented by the full length of the cord. The number 0 represents the starting line and 1 represents the opposite end of the string, 32 feet away. Attack the 0 end of the measuring string to the center of the starting line.
- Standing at the starting line, throw a small paper plate.
- Walk the measuring string out to where the plate landed. If the plate goes further than where the string can reach, tape down the string at the 1 end and flip the 0 end around to keep measuring. Your fraction will be greater than 1.
- Record the fraction representing where your plate landed on your record sheet.
- Repeat this activity two more times.

Thinking Questions:
-Who jumped/threw the farthest in your group? How do you know?
- What fraction of the middle school record was your longest/shortest jump/throw?
- What fraction of the middle school record was the sum of all your long jumps/discus throws?
- What fraction is the sum of your three long jumps? Can you compare this number to the fraction representing your longest triple jump? Why or why not?