Fourth Grade Math
Higher Order Thinking (H.O.T.) Lesson
BIG E

Approximate Time: 45 minutes

Learning Objectives:
The student will be able to –
1. Find patterns in a data set of large numbers.
2. Make accurate predictions based off of a data set.
3. Explain the strategies used for their predictions.

Language Objectives:
The student will be able to –
1. Review definitions for **predict, estimate, attendance, increase, decrease.**
2. Provide written and verbal justifications that explain why an answer makes sense.

Materials:
1. "Kid Friendly" objectives
2. The Big E worksheets
3. Pencil
4. Scrap paper

Procedures:
1. Hook - Can you use a sentence with the word attendance in it?
2. Go over objectives with students. Review partner norms.
3. Whole class discussion: Can we describe what The Big E looks like? If you have never been to it, have you ever been to a carnival or an amusement park? How are these places similar?
4. Review attendance chart. In pairs, make predictions for the years 2007 and 2008. CHECKPOINT.
5. Assign questions #1-3 in pairs. Review rubric for scoring. CHECKPOINT
6. Move pairs that are done onto Challenge Questions.
7. Whole class discussion. Discuss answers to questions #1-3. (Revoice. Extend thinking with "HOT" questions.)
8. Ask students who were able to complete Challenge Questions to share responses.

Closure:
Ask students orally – Why are estimates of attendance important to the organizers of The Big E? Do you think the attendance numbers will increase from year to year? Etc.

Assessments:
1. Pairs discussion/CHECKPOINTS
2. Whole-class discussion
3. The Big E worksheets

The Big E
(Eastern States Exposition)

Below is a chart of the attendance at *The Big E* in 2004, 2005, and 2006.
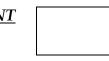
Year	Attendance
2004	1,700,000
2005	1,600,000
2006	1,500,000

Look at the chart's data. **Predict** what the fair's attendance will be in 2007 and 2008.

2007: _____

2008: _____

CHECKPOINT

1. What strategies did you use that helped you make your **predictions**?
   (score: 0   1   2)

_____

_____

_____

2. What do you notice about The Big E's attendance as the years go on? Use math words in your answer (**increase**? **decrease**?).   (score: 0   1   2)

_____

_____

_____

3. What if the attendance in 2005 had been 1,200,000? Would that have changed your **predictions** for 2007 and 2008?   Why or why not?   (score: 0   1   2)

_____

_____

_____

_____

CHECKPOINT

CHALLENGE QUESTIONS

Can you **PREDICT** what the attendance at The Big E might be in ….

2015? _____

2020? _____

How did you make your **predictions**? Use **time sequence** words to explain**.**

_____

_____

_____

_____

What are some factors that might make the attendance at The Big E **increase** or **decrease** from year to year? Give an example of both.

Increased attendance: _____

_____

Decreased attendance: _____

_____