PETER'S CHAIR

By Ezra Jack Keats

Peter is not pleased by the arrival of his new baby sister. Not only does she seem to infringe upon his noisy playtime, but his parents also have preempted his baby furniture for her use. And worse yet, they have painted it pink! When his favorite chair seems to be the next painting subject, Peter acts. Taking his chair, food and other beloved items, Peter runs away... to the front stoop. As Peter goes to sit down in his baby chair to think, he begins to understand what it means to be a big brother.

Suggested Time

One 30-45 minute session

Common Core Standard

Measure and estimate lengths in standard units.

- 2.MD.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
- Work together in a group to solve a problem.

Learning Objectives

- Class discussion to determine good design ideas
- Class review of Engineering Process
- Chair construction activity

- Student ability to measure to the nearest inch.
- Student ability to work in cooperative groups.

Materials:

Book “Peter’s Chair” to be read with the “big” stuffed version of Peter.

Pictures of Chairs

Three Hula Hoops

Three smaller versions of Peter

Three boxes of LEGO DUPLOS

Three measuring tapes

1. **INTRODUCTION** – Begin with the story:

   Before Reading:

- Look at the cover and model gaining information from the cover. "When I look at this cover, I see that the title is *Peter's Chair.* There must be a boy named Peter and he must really like his chair for a book to be written about it. I see a boy here, and a pink chair. I wonder why the chair is pink. Something is changing here. I can look at the cover of the book and make some predictions about the story."
- Discuss favorite toys. If you recall a favorite toy from your past, talk about it. What favorite toys do some of the students in the class have? Why does this toy mean so much to you? Who gave the favorite toy to you?
- Discuss the meaning of the following vocabulary words: rascal, cradle, jealous, sharing.

After Reading:

- What was Peter’s problem? How did he solve it?
- What does it mean to “outgrow” something? Discuss how someone might not play with that toy anymore because they feel they are too old for it.

- What happens to things we outgrow? What happened to Peter's things that he outgrew?

Explain to the students that they are going to make a surprise for Peter. They will make him a new chair!

2. Lesson

Tell students that they will construct a sturdy chair for Peter. The chair must be able to support Peter from the front, sides and back. Ultimately, the chair must keep Peter in a sitting position without him falling out of the chair. Peter's feet must be 1 inch from the ground when he sits down – he wants a chair he can grow into!

Direct student's attention to the Engineering Process which can be found on the LEGO LAB easel. Go over the different components with students.

Engineers typically work together to solve the problems people may have. Engineering design is the process of creating solutions to human problems through creativity, imagination and the use of math and science knowledge. The basic steps within the design process include:

A. Identifying a problem –
Observing a problem and seeing a need for a solution.

B. Researching and brainstorming possible solutions –
Coming up with ideas to address the problem.

C. Picking the best solution –
Determining which idea best addresses the problem. This decision may involve monetary, practicality, material, and property concerns.

D. Building a prototype –
Build a working model of the chosen design.

E. Testing the prototype –
Be sure the working model solves the problem and holds up to any important material property tests.

F. Repeating any steps needed to improve the design –

The engineering design process is not always a step-by-step process, as engineers often repeat steps or go back and forth between the other five steps.

3. **<u>Activity</u>**

Review the posted LEGO rules.
Remind students that the engineering problem they need to solve for this lesson is to surprise Peter by creating a sturdy chair that will support him on all four sides. The chair must be able to hold up Peter and prevent him from falling out of the seat. Peter's feet must reach 1 inch off the ground. Demonstrate how to use the tape measure, if necessary.

Show the students the different pictures of chair designs and discuss the benefits of one chair to another.

Divide students into three groups and send each group to an area of the room with a **hula hoop**, **box of DUPLO blocks**, a **measuring tape**, and **Peter**.

Tell the students that they will have 25 minutes or so to build Peter a chair. As students move into groups and start to build, rotate among groups and note how students are working together. Ask **"Who will do the measuring?" "Who will help find blocks?" "Who is going to do the building?"** Make comments about constructions such as **" Peter's feet are not off the floor. How can you make the chair higher?"** and **"Peter's arms need something to rest on. What will you design?"**

At the end of the designated time, gather the students together and ask them how well they worked together. What worked? What didn't work? What would you have liked to have to make your design better?"

Allow each group to sit by their constructions and demonstrate their chairs, while the rest of the group stand by. As a group, decide whether each group solved the problem. If not, why not? Which designs worked? Which didn't?