Lesson to Grow

Agricultural Inventors

Grade Level: K-4

Essential Skills: 1, 4, 5, 9

NGSS: K-2-ETS1-1; K-2-ETS1-2,K-2-ETS1-3; 3-4-ETS1-1; 3-4-ETS1-2; 3-4-ETS1-3

CCSS: K.RL.1; K.RL.3; K.RI.1; K.RI.2; K.RI.4; K.SL.1; K.SL.2; K.SL.3; 1.RL.1; 1.RL.3; 1.RI.1; 1.RI.2; 1.SL.1; 1.SL.2; 2.RL.3; 2.RI.1; 2.SL.1; 2.SL.2; 3.RL.1; 3.RI.1; 4.RI.1

Social Studies: K.13; K.15; K.16; K.18; 1.15; 2.18, 2.21

Time: 45 minutes

Materials: Inventor's Kit* or:
- 6 Invention cards*
- 10 craft sticks*
- 8 binder clips*
- 6 clothespins*
- 5 objects (i.e. tape dispenser, water bottle, stapler, etc.)

*Free kit with all materials available from Oregon Agriculture in the Classroom

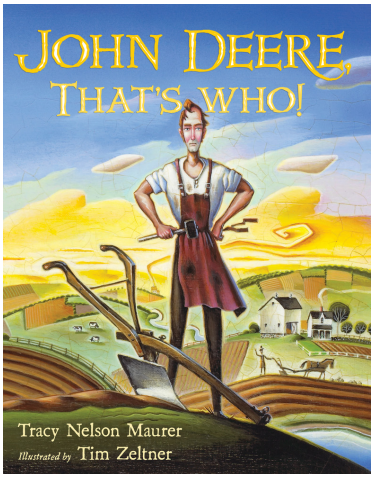
AITC Library Resources:

Books:
John Deere, That's Who!

More Lessons:
Drones in High Tech Farming
Growing a Nation: Growing Technology
High-Tech Farming
High-Tech Food
Increasing Food Production with Precision Agriculture
Robots in High-Tech Farming
Technology in Agriculture

Description:

Back in the 1830s, a young blacksmith from Vermont, made his mark on American history. *John Deere, That's Who!* is the story of John Deere and his development of the steel plow. Beautiful illustrations accompany the fun text and bring the story of this remarkable innovator to life.



Background:

The book John Deere,That's Who! provides a look at agricultural technological advances and how these innovative technologies have allowed farmers to farm more sustainably. Read as a group, then have students discuss the following questions:
1)What problem did farmers have that John Deere helped solve?
2)How did the steel plow solve those problems?

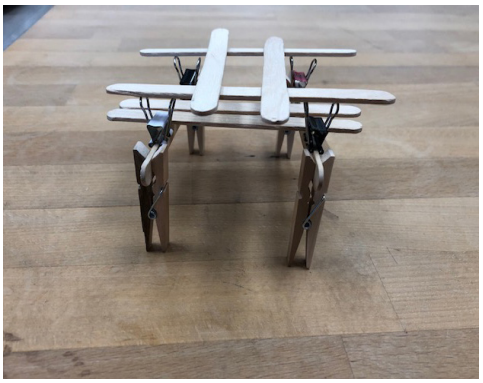
Directions:

Part I: Agricultural Inventions **Timeline**
1) Show students each of the 6 inventions cards reading each caption aloud and placing it on the board.

2) Divide students into five groups. Have each group discuss where each card should be placed in a timeline of agricultural inventions starting with the oldest. Go around the room and have students share what sequence the group place each invention in.

3)Review the correct order of inventions (C, F, E, B, D, A) with students and discuss challenges or problems these inventions helped solve and their contribution to sustainability.

Part II: Students as Inventors (STEM Activity)
1)Provide students with the context that when farmers drive their tractors over soil it compacts which reduces the air and water in the soil. Today, your challenge is to see if you can help these farmers out! Your goal is to build a structure to support the weight of an object they choose using the least amount of surface area possible (least amount of points touching the table). This represents spreading the weight of equipment used in agriculture over a broad area to reduce compacting the soil.



2) Provide each group with a set of Building

Materiales (10 palitos de manualidades, 8 clips de carpeta y 6 alfileres de ropa) y un objeto y déles 7-10 minutos para construir una estructura.

3) Haga que cada grupo presente su estructura de apoyo a la clase y la pruebe colocando el objeto asignado en la estructura.

4) Cuando la actividad esté completa, haga que los estudiantes desmantelen su estructura y coloquen los materiales nuevamente en su bolsa.

5) Discuta las siguientes preguntas:
a. ¿Cómo se relaciona esta actividad con la agricultura?
si. ¿Qué técnicas usaste para construir tu estructura? Como decidiste
C. ¿Cuántos puntos tocaron la mesa?
re. ¿Su estructura contenía el objeto? ¿Por qué o por qué no?
mi. ¿Cómo podrías mejorar tu estructura?