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**Findley Oaks STEM Connect**

**1st Grade Design Brief**

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| **Month**  **April** | **Challenge**  **Grass Head**  **Recyclable Materials** | **Unit**  **Plants** |

**Standard:**

Students should follow the **Engineering Design Process.**

**Background/Problem:**  **Do you remember what plants need to grow? Let’s make a list.**

**Our classroom needs some sprucing up. Your teacher needs your help. Can you make a few grass heads to help decorate the room?**

**Design Challenge:** Design and make your own grass head.

**Criteria:**

Your grass head must:

* have a nose, mouth, and two eyes.
* be dressed.
* be either a boy or girl.
* have an accessory.

**Constraints:** You can only use the materials provided. Everyone in your group needs to participate.

**Materials: (per group of 2)**

You will need:

* **Old nylon stockings** or pantyhose. Knee highs and pop socks, work great. You can also use regular old socks, but the grass sometimes has trouble poking through.
* **Grass seeds**. I bought a small "lawn repair kit" which has seeds pre-mixed with slow release fertilizer, but you can use whatever seeds you've got handy. I hear that chives, rye or alfalfa seeds also work well.
* **Sawdust or potting mix** for stuffing. Or just some soil from your garden. I got a bag of sawdust for free from a big hardware store - they seemed happy to get rid of it!
* **Small yoghurt pot**.
* **Decorations**. Goggly eyes and fabric scraps for the heads, colored paper for the bodies, pipe-cleaners for spectacles... get creative :-)
* **Water-proof glue**. For sticking on the eyes, lips, etc. I used hot glue, but you can use any sort of glue so long as it won't dissolve in water.

**Tools:**

markers and / or crayons

scissors

crazy scissors

hole punch

staplers

rulers

Paper (For design planning)

Pencils



Instructions

**Step 1:** Cut off an 8" (20cm) section of stocking that includes the toe. (You could also use a "tube section" that doesn't include the toe - you'd just have to tie a knot in one end to close it, then turn it inside-out to hide the knot.)

**Step 2:** Stretch the stocking over a large cup or mug, and spoon in about 2 teaspoons full of grass seeds.

**Step 3:** Pack in some sawdust or potting soil. Aim for the head to be roughly tennis ball sized.

**Step 4:** Tie a knot to close the end. No need to cut off the dangly bit.

**Step 5:** You can make a bulbous nose or ears by grabbing a bit of stocking and twisting. Fasten base of the nose with some thread or a small rubber band. 

**Step 6:** Decorate! Use fabric scraps or permanent marker to decorate the face, and coloured paper to make the yoghurt container into a dress or a suit or whatever you like - get creative! Just make sure that any glues or markers you use for the head are water-proof.

Growing your Grass Heads

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| rass heads monster |
| *Grass grows a bit unreliably through a sock* |

When you're ready to grow your head, give it a good dunking in a bowl of water to moisten the sawdust/soil. Half-fill the yoghurt container with water, and put the head on top, with the excess stocking dangling down into the water.

Put your creation on a windowsill or somewhere with plenty of sunlight. Check every day to make sure the head is moist - you might need to dribble a few drops of water onto the head now and then.

**"Hair" takes about 1 week to sprout**. A full head of hair takes 3-4 weeks to grow, and and "greying and balding" will occur after about 6 weeks. Experiment with different hairstyles :-) You can make mohawks, pony-tails, crew-cuts... have fun with it!