6th Grade N.E.S.T. Plans
ROBO WHEELS

This week in N.E.S.T.:

On Monday students will check in and share out. On Tuesday- Thursday, students will participate in a fun group building activity to minimize stressors they feel during the holidays. On Tuesday and Wednesday groups will create a ROBO wheel. On Thursday, each N.E.S.T. will compete against another N.E.S.T.- racing their ROBO wheels. *****Advisors will need to bring either masking tape or duck tape to N.E.S.T. on Tuesday *****

Routine Reminder

Students should walk into the meeting area and answer the DAILY NEWS on the board(s), get into their CIRCLE, and listen to the morning announcements. After Circling Up, students GREET each other and then begin to check-in. Mondays are all about the CHECK-IN. It is important to really scaffold students to get them sharing as much as possible. Once each student has had the opportunity to check-in the group may begin the ACTIVITY. 5 minutes before transition, the group may REVIEW the answers on the daily news board and/or REFLECT on the activity.

Day 1

Objective: Student will check in and share out.

Materials Needed: none

1.Daily News: Manic Monday! What is one thing that drives you absolutely CRAZY?!? **(5 minutes)**

2.Greeting: Everyone Greets and is greeted (students sit in a circle)

3.Formal Sharing/ Check-in: (10 minutes)

- **Today we will not only check in 1-5 but we will also share whatever we want with our group. We can share by answering these three questions:**
  - What did you do this weekend?
  - How are you feeling about the report cards going out this week?
  - What class are you looking forward to today?
  - What is one thing you learned in school last week?

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5. Review Daily News and Discuss: (5 minutes)
Ask the following questions to guide students in reflection:

Have students share what they wrote.

Day 2 and Day 3

OBJECTIVE: Students will create a group ROBO wheel which they will use to race against another N.E.S.T. on Thursday.

Materials Needed: 2 paper bowls, 2 rubber bands, 3 feet of string, 1 thumbtack/pushpin, tape (duck or masking), 1 sharp pencil.

Tuesday Daily News: Have you ever created something out of household items? If so, what?

Wednesday Daily News: What skills do you use when you work as a group/team in a competition?

2. Greeting: Everyone Greets and is greeted (students sit in a circle)

3. Check-in: (5 minutes)

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4. Activity: Creating a ROBO wheel

Procedure:

- Review Daily News. Allow time for students to share their creations.
- Share with students that they will be participating in an N.E.S.T. challenge where they will be racing ROBO wheels.
- Show this video to give students a better idea of what a ROBO wheel can do:
    - http://pbskids.org/designsquad/build/robo-wheel/

- Break your N.E.S.T. into two groups. Each group will create a ROBO wheel.
- Give students all materials and the following instructions on how to create a ROBO wheel: (This will take two days.)

1. **Find the center**

    - Nest the bowls together. Wrap a rubber band around the bowls.
    - Slide it right and left until it divides the bottom circle of the bowl into two equal halves.
    - Make an "X" with the other rubber band. The four quarters make four "pizza slices."
    - Move the rubber bands until all four "pizza slices" are of equal size.
    - The center of the circle is where the rubber bands cross.

2. **Mark the spot**

Mark two dots on each side of the center. Make them equal distance from the center and about a half inch apart. (About the width of your index finger)

3. **Make the holes**

With your dots as a guide, use the pushpin to poke holes in the bowls

4. **Widen the holes**

- Remove the rubber bands and separate the bowls.
- Poke a sharp pencil into a pushpin hole. Twist it and push gently. Stop when the hole is just a bit bigger than the string. That's usually around where the wood part of the pencil starts, just after the black lead.
- *TIP: If your two holes get larger and become one big hole… Make two new holes in the two other "pizza slices" near the center. Keep them small. Set them a finger's width apart.*

5. **Thread the string**

- Begin by threading the string through the bottom of Bowl 1, starting from the outside.
- Next, thread the string through one of Bowl 2's holes, coming from the inside.
- *TIP: If threading the string through the holes is hard to do… Try doing one of these:*
  a) Wet the end of the string.
  b) Wrap the tip in clear tape to stiffen it (like the hard tip of a shoelace).
  c) Push the string through the hole with the pencil.
  d) Re-poke a hole so its little paper rim is bent in the direction the string is going.
  e) Make the hole a little bigger.

6. **Thread the string (cont'd)**

- Then thread the string through the bottom of Bowl 2, coming from the outside.
- Finally, thread the string through the open hole in Bowl 1, coming from the inside.
- Tie the ends of the string together with a knot.

7. **Thread the string (cont'd)**

The two bowls should face each other, with the string looping through them.

8 **Tape the bowls**

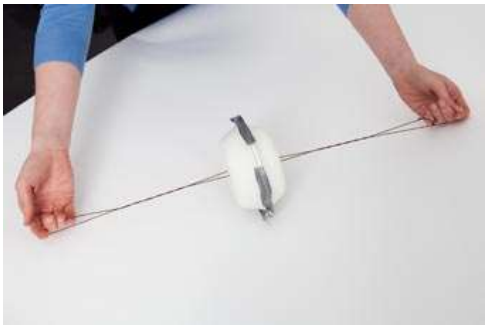
- Tear off four 2-inch squares of tape. For now, stick them where they will be easy to grab.
- Line up the bowls so the holes are even with each other.

9. **Tape the bowls (cont'd)**

Stick the tape so the pieces are across from each other.

10. **Wind up the string**

- Slide your wheel to the middle of the string loop and hold both ends.
- To twist the string, push the wheel across the table or floor or ask a friend to help you spin the wheel to wind up the string.



11. **Spin the wheel**

- Pull outward on the string. The wheel will spin as the string untwists. Pull hard.
- Stop pulling just before all the twists unwind.

12. **Spin the wheel (cont'd)**

- Bring your hands together so the string is loose and the wheel sags down a bit. The Robo Wheel will keep spinning and will twist the string in the other direction.
- When the wheel stops spinning, pull out again, hard.

- *TIP: If you're having trouble revving up the wheel…The Pull-Relax technique takes a moment to master. Just like a yo-yo or pumping on a swing, it's about getting the timing right. Soon you'll have the wheel spinning quickly.*

13. **Practice revving up**

- Now that you've practiced spinning the wheel, try releasing it.
- Hold the string with your thumbs in the loop. Hold the wheel just above where you want to launch it.
- Spin the wheel forwards and backwards a few times to get it revved up.

14. **Release the wheel**

- Wait until the wheel is spinning away from you to begin your release.
- Let the string unwind until it is almost completely untwisted. (At this point, there will be lots of room for your thumbs to release the string.)
- Drop the string, and watch your wheel go!

- After students build their ROBO wheel- have them compete against each other for practice.
- Have students create a cool design on their ROBO wheel.
- Remind students to cheer each other on during the race tomorrow.

5. Review Daily News and Discuss: (5 minutes)
Ask the following questions to guide students in reflection:

Tuesday: Have students discuss what they wrote.

Wednesday: Skills that people use when working as a team are: communication skills, participation skills, brainstorming skills, listening skills, turn-taking skills- these are all important skills to develop.

Day 4

OBJECTIVE: Students will race their ROBO wheels against another N.E.S.T..

Materials Needed: ROBO wheels

1.Daily News: GO TEAM!!! (Write words of encouragement for today's race.)

2. Greeting: Everyone Greets and is greeted (students sit in a circle)

3. Check-in: (5 minutes)

4. Activity: ROBO Wheel Race

Procedure:

- After attendance and quick check in, meet with your competitor in the assigned location (SEE WHO YOU ARE MATCHED UP WITH ON THE WEEBLY SITE UNDER SUPPORTING DOCUMENTS.)

Advisors will facilitate this competition.

1. To facilitate the competition you MUST create a start line and a finish line (Use masking tape to mark each line on the ground.) I suggest starting with a finish line 5 feet away from the start line and then increasing it depending on students' progress.

2. Pair 1 student from your N.E.S.T. with one student from your competitors N.E.S.T. (for example, 1 student from TEACHER As N.E.S.T. will compete with 1 student from TEACHER Bs N.E.S.T..)

3. Have each pair take turns racing their ROBO wheels.

4. Track points. (For example, if the student from TEACHER As N.E.S.T. wins the race against the student from TEACHER Bs- then TEACHER As group gets the point.)

5. After each pair has raced, add up all the points. The N.E.S.T. with the most points wins! - Feel free to play more than one round.

- Debrief the activity:

1. Ask the groups-

    - How did you feel about the competition?
    - What do you think made one ROBO wheel go faster than another ROBO wheel?
    - Did your N.E.S.T. cheer you on?
    - Do you think cheering each other on helps us be better competitors?
    - How did we handle losing the competition? How did we handle winning the competition?