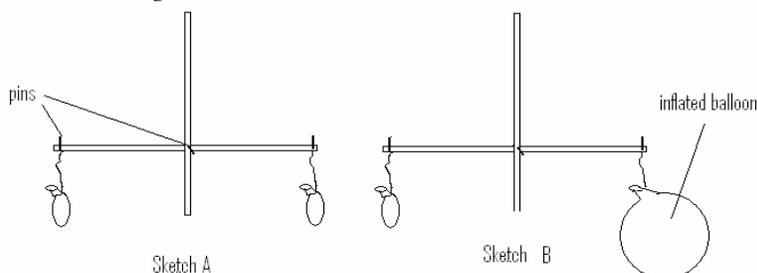


THE BALANCING BALLOONS

A. Question: *Does air have weight?*



B. Materials Needed:

1. Two drinking straws
2. Three pins or needles & two pieces of thread
3. Two identical non-inflated balloons

C: Procedure:

1. Tie a piece of thread to each of the two balloons. Then tie these threads to the ends of one of the straws.
2. Take this straw and position it on your finger so that it balances. At this point where it is balanced, push a pin through the straw.
3. Take the other straw and position it so that it is perpendicular to the straw with the attached balloons. A “+” will form. Push the pin through this second straw. The needle will allow the horizontal straw to swivel like a balance.
4. So that the balloons on the end of the straw do not slip off of it, push a pin through the threads that are serving as attachments.
5. Make sure that the straws are moving freely around the needle and make sure that the two non-inflated balloons are in perfect balance.
6. Blow air into one of the balloons and tie it in a knot.

D: Anticipated Results:

The students will see how a balance can easily be made. They will also see how this balance functions. And when one of the balloons is inflated, the balance will tip down at the end where it is attached.

E: Thought Questions for Class Discussion:

1. What is inside the non-inflated balloons?
2. What kind of air was blown into the balloon?
3. What could happen if no pins were placed on the ends of the horizontal straw where the thread were attached?
4. What does the balance indicate after inflating one balloon?
5. What would you expect the balance would do if the other balloon was also inflated?
6. How else could we show that air has weight?

F: Explanation:

The straw balance may be adjusted by moving the threads further or closer to the end of the straw. In order to keep these attached threads from sliding, we need the pins. The air that was blown in the balloon was exhaled air, which contains some water vapor but, for our purposes may be neglected. Inflating the other balloon with the same amount of air should put the balance back to equilibrium again.