Rocket Go Round

Problem
To understand the action-reaction principle of a rocket

Background
Newton’s Third Law of Motion states that every action is accompanied by an opposite and equal reaction.

Procedure
1. To stretch out the balloon, blow it up and release the air several times.
2. Place the end of the straw without the bend inside the open neck of the balloon.
   See diagram 1.
3. Use a small piece of tape to seal the balloon to the straw. The balloon should inflate when you blow through the straw.
4. Bend the straw at a right angle. See diagram 2.
5. Place the straw and balloon onto one of your fingers and move it around until it balances.
6. At the balance point (the place where your finger is touching the straw when it balances), push the straight pen through the straw.
7. Push the straight pen into the center of the eraser and finally into the wood of the pencil. See diagram 3.
8. Spin the straw a few times to loosen up the hole the pen made in the straw.
10. Once it spins freely, blow up the balloon and hold your finger over the end of the straw to keep the air from escaping.
11. Hold the pencil away from your body and then release the straw.

Conclusion
1. In which direction did the straw and balloon spin? Why?
2. Use Newton’s Third Law to explain what happened in this experiment.