

Planes Telephone

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1 Goals

The goals of this activity are:

1. To give students practice working with planes and their various descriptions.
2. To give students practice with cooperating with students outside their group.

2 Materials

For this activity you will not need any materials.

3 Instructions

This activity will take approximately 45 minutes.

1. Form four groups of students, and explain the goals of the activity. Arrange the groups in a rough circle. Ask each group to designate a *runner*.
2. Give each of the four groups an equation of a plane, making sure a group cannot tell what equation another group got.
3. In this activity, when a group receives an equation of a plane, they must convert it to 3 point form. If they receive a 3 point form, they must convert it to a parametric form. If they receive a parametric form they must convert it to a point-normal form. And if they receive a point-normal form, they must convert it to an equation.
4. After a group carries out a conversion, ask the runner from that group to communicate the new description of the plane to the group to their right.
5. After each group has performed 4 conversions, they should receive an equation from the group on their left. If everything went well, this should be the same equation they started with.
6. If something went wrong, let students try and identify how it happened.

4 Tips

1. You can use the equations $2x + y + z = 3$, $3x + z = 5$, $4x - 2y - z = 0$, $x - y + 3z = 2$.