9/5 Honors Geometry Warm-up

Discuss with your partner (same number, same color): Why does a three-legged stool never wobble, but a four-legged chair sometimes wobbles?

Take out Algebra Review WS
1-1 Points, Lines, and Planes

Space: boundless, three dimensional set of all points

<table>
<thead>
<tr>
<th></th>
<th>Point</th>
<th>Line</th>
<th>Plane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td><img src="image" alt="Point" /></td>
<td><img src="image" alt="Line" /></td>
<td><img src="image" alt="Plane" /></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Location without <strong>shape</strong> or <strong>size</strong></td>
<td>Made up of <strong>points</strong> extended infinitely; no <strong>thickness</strong> or <strong>width</strong></td>
<td>Flat surface made up of <strong>points</strong> extended infinitely; no <strong>depth</strong></td>
</tr>
<tr>
<td><strong>Named by</strong></td>
<td>a capital letter</td>
<td>a lower case script letter or 2 points on the line</td>
<td>a capital script letter or by the letters naming 3 noncollinear points</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td><img src="image" alt="Point Example" /></td>
<td><img src="image" alt="Line Example" /></td>
<td><img src="image" alt="Plane Example" /></td>
</tr>
<tr>
<td><strong>Facts</strong></td>
<td>• A point has <strong>no</strong> dimension</td>
<td>• A line exists in 1 dimension. Points on the same line are collinear. There is exactly 1 line through any 2 points</td>
<td>• A plane exists in 2 dimensions. Points on the same plane are <strong>coplanar</strong>. • There is exactly one plane through any 3 noncollinear points</td>
</tr>
<tr>
<td><strong>Nature</strong></td>
<td>Cities on a <strong>map</strong></td>
<td>Light beams on a <strong>map</strong></td>
<td>Hologram on a <strong>map</strong></td>
</tr>
</tbody>
</table>
Ex 1: Do these lines intersect? **Yes**

Ex 2: Modeling intersecting Planes

1. Label one index card as Q and another as R
2. Hold the two index cards together and cut halfway through both cards
3. Hold the cards so that the slits meet and insert one card into the slit of the other. Use tape to hold the cards together.

Two planes intersect in a **line**.
### Exercises

Refer to the figure.

1. Name a line that contains point $A$.

2. What is another name for line $m$?

3. Name a point not on $\overline{AC}$.

4. Name the intersection of $\overline{AC}$ and $\overline{DB}$.

5. Name a point not on line $\ell$ or line $m$.

Draw and label a plane $Q$ for each relationship.

6. $\overline{AB}$ is in plane $Q$.

7. $\overline{ST}$ intersects $\overline{AB}$ at $P$.

8. Point $X$ is collinear with points $A$ and $P$.

9. Point $Y$ is not collinear with points $T$ and $P$.

10. Line $\ell$ contains points $X$ and $Y$. 
Exercises

Refer to the figure.

1. Name a line that is not contained in plane X.

2. Name a plane that contains point B.

3. Name three collinear points.

Refer to the figure.

4. How many planes are shown in the figure?


6. Name a point coplanar with D, C, and E.

6b. Where does plane FEC intersect plane GFB?
Draw and label a figure for each relationship.


8. Line $r$ is in plane $M$, line $s$ is in plane $N$, and lines $r$ and $s$ intersect at point $J$.

9. Line $t$ contains point $H$ and line $t$ does not lie in plane $M$ or plane $N$.

extra :)