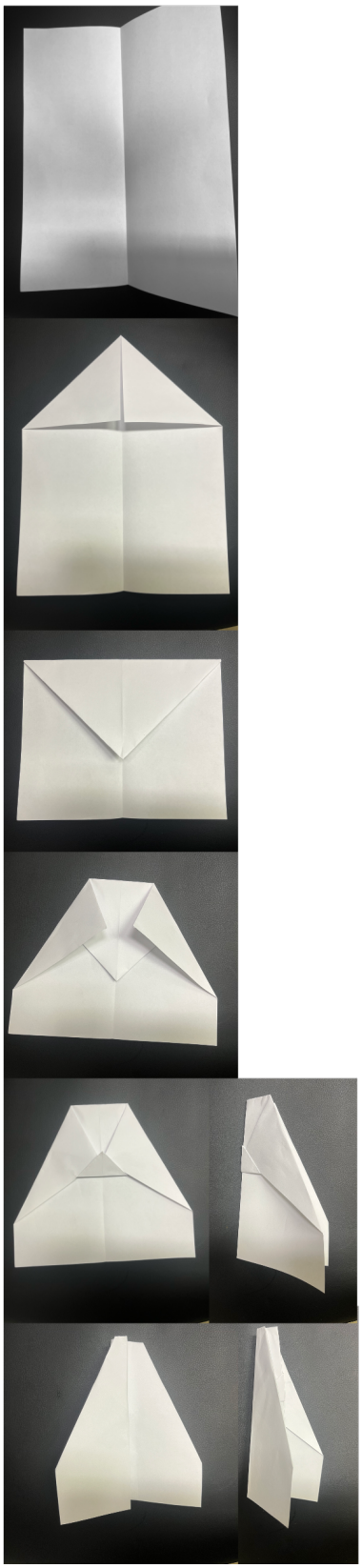
Paper airplanes, with a beat!



The rationalle.

I love paper airplanes and this is one of the best!

The set up and roles

Please group yourselves into assembly lines of six people. (If there are extra people, they can be our inspectors and data collectors.)

Within a group we have 6 steps that need to be completed, each one done by a different person.

1. Person 1 folds the paper in half and passes it to person 2.
2. Person 2 folds the two corners to the center line and passes the paper person 3.
3. Person 3 folds the top triangle down to form a square and passes it to person 4.
4. Person 4 folds the top two corners to the center line and passes the paper person to person 5.
5. Person 5 a) folds the little triangle in the middle up to catch and hold the two folded-in corners, b) folds the paper in half along the center line, then passes the paper to person 6.
6. Person 6 folds the wings down on both sides and puts the plane in the center of the table.

Again, **each person should do their thing in each step.**

Importantly, **we will pass on the beat**. Moreover, **you must pass the paper *on* the beat even if you are not ready.**

Practice

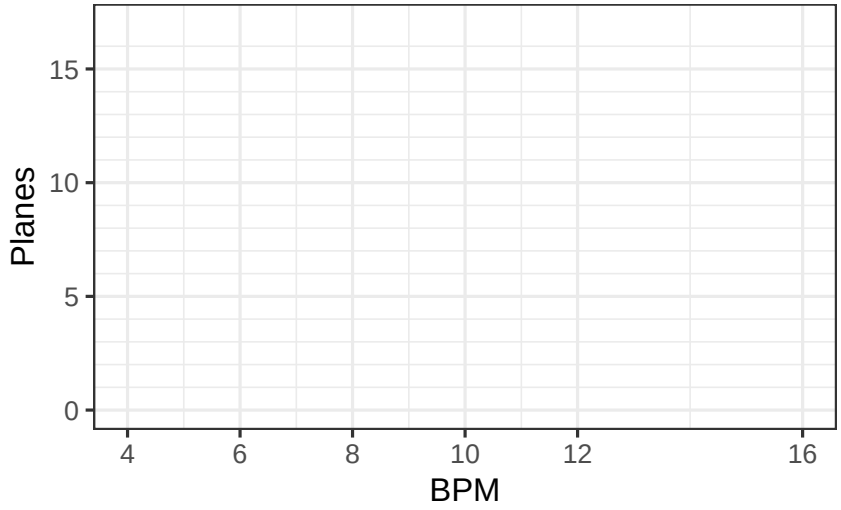
We will practice once or twice to make sure we get it. We want to make sure to "prime the pump" so that in the end everyone has the thing that they will be working with. That is, we want to be sure that when I say "go", everyone can do their action or process.

For real!

Our goal is to find the optimal tempo for our assembly line. We will use a metronome to set the temp. For each tempo we will record the total number of airplanes in the center of the table after 1 minute *and* the number of mistakes. A mistake is any plane that is not folded as it should be.

Tempo (bpm)	4	6	8	10	12	16
# total						
# mistakes						

Then, on these axes plot the number of planes (in total) for each tempo (beats per minute, or BPM) and the number of mistakes that occurred.



The take home

You probably suspected that this wasn't (entirely) about making airplanes. This was a physical model (or analogy or game) representing how rates of biochemical reactions tend to increase with temperature, and the costs of those temperature increases. Like all models, it is wrong, but is (hopefully) useful.

Take a moment and discuss with your group what is wrong (or right) with this model and what is useful. How does it compare to reality? What ideas or questions or thoughts has it spurred?

The good

The bad