

Ready, Set, Design · Prototyping Bag Kit

Pick from each of the three categories, write your counts, then build every bag the same way.

Your closet is not my closet.

The items below are a menu, not a shopping list. Swap in what you have. The categories are what matter, because each one does a different job in the build.

Write how many of each item go in one bag.

One bag serves a group of four students. Use the blank chips for anything your closet has that is not listed.

FASTENERS join pieces together	  Pipe cleaners	  Rubber bands	  Paper clips	  String or yarn	 your own
	  Cardboard	  Paper or card	  Cotton balls	  Balloons	 your own
	  Craft sticks	  Straws	  Aluminum foil	 your own	 your own
					 your own
					 your own

Four rules for a kit that works

- 1 Take something from all three categories. A bag with no fasteners cannot be assembled, and a bag with no structure collapses.
- 2 Every bag holds the same things. Groups compare designs at the end, so the materials have to be the same.
- 3 Keep it small. Four to six kinds of item is plenty. A bag with everything in it removes the design problem.
- 4 Decide the counts before you start bagging, then write them on this sheet so anyone can assemble the rest.

One kit that worked

Lucero, 2027. Nine items, groups of four, 20 minute build.

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|-----------------|---------------------|
| 1 Ziplock bag | 2 Cardboard squares |
| 4 Pipe cleaners | 4 Cotton balls |
| 3 Rubber bands | 8 Craft sticks |
| 4 Paper clips | 4 Straws |
| 1 String, 24 in | 3 Foil sheets |

No glue, tape, or scissors

That rule comes from ASU and it is why every kit needs fasteners. Students will ask for more materials anyway. The request is the design problem doing its job, so send them back to what is in the bag.

How many bags
do you need?

÷ 4 =

×

=

students in
your largest class

groups, which is
bags for that class

class periods
running the lesson

bags to build
in total