Create and Play Tic-Tac-Dino!

Grade Span

3-8

Subject Area

- Math
- English Language Arts

Materials

- Fab@School Maker Studio
- Printer
- Digital fabricator or scissors
- 65lb or 110lb cardstock
- Tape or glue

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Put a spin on the classic Tic-Tac-Toe game with the excitement of dinosaurs that pop off the game board as you play! With Tic-Tac-Dino, students can experience the first steps of creating their very own board game in Fab@School Maker Studio and playing it with their friends.

Tic-Tac-Dino is an easy-to-play board game with very few parts, that provides students with inspiration for exciting new board game ideas and techniques to create them.

Objectives

- Students use Fab@School Maker Studio to print and fabricate their own Tic-Tac-Dino game board to play and experiment with.
- Students can use their design skills to experiment with modified board designs and brand new games.

Big Idea

Functions help to determine form.

Driving Question

How does probability relate to playing a game?

Learning Standards

NGSS

- ETS1.C

CCSS ELA

- CCSS.ELA-LITERACY.RST.6-8.3

CCSS Math

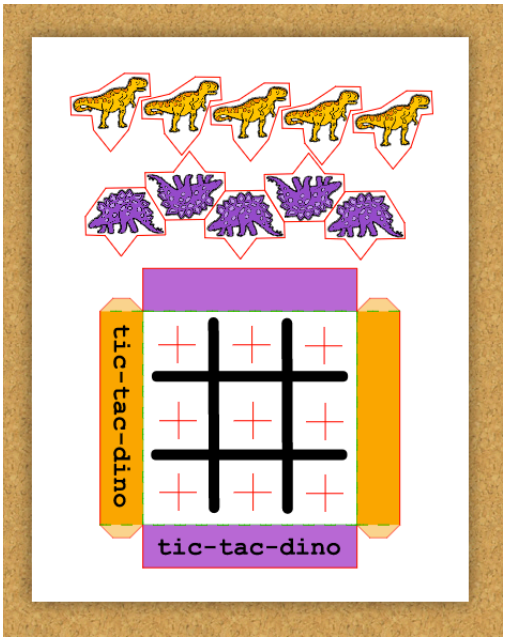
- CCSS.MATH.PRACTICE.MP1

MS DLCS

- 3-5.CT.a.1
- 3-5.CT.b
- 6-8.CT.b

Step 1 - Print and Fabricate Tic-Tac-Dino

1. From the **Main Menu** screen, select **Ready-Made Projects** and choose the tab for **3D Stuff**. Locate the **Tic-Tac-Dino** file and select **Open.** The Tic-Tac-Dino game board and pieces will open in the **Edit Screen.**



2. Click the **Print** icon to open the print dialog. Select the registration marks for your model of Silhouette digital fabricator. Click **Save to PDF**.

3. Open the saved PDF file on our computer and open the print dialog. Make sure the scale is set to 100% and the page isn't set to auto fit. Print the PDF onto cardstock paper.

4. Click the **Fabricate** icon. Be sure the FabPrintServer app is running and your digital fabricator is connected, turned on, and selected at the top of the Fabricate dialog. Place the printed cardstock on the sticky side of the mat as shown in the dialog. Follow the directions and click **Send to Cutter.**

Step 2 - Assemble Tic-Tac-Dino

1. When the project is done fabricating, unload the mat and paper, and peel the game board and pieces from the mat.

2. Fold all perforated edges on the game board. Glue or tape the small tabs on the short edges of the orange sides to the short edges of the purple sides.

3. Press the tip of a pencil into the plus-shaped slits on the top of the game board to open them slightly. This is to allow the game pieces to be easily inserted into the game board. You are now ready to play Tic-Tac-Dino!

Fab@School Maker Studio Tips

Magnetize: If you want shapes to automatically snap and create fold lines when you drag them together, be sure **Magnetize** tool is on. To learn more about the tool, have students watch the Fab@School Maker Studio Shapes Tutorial video.

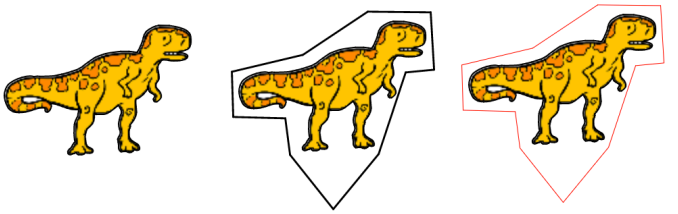
Cut Fold Tab: Use the **Cut Fold Tab** tool on the left toolbar to change lines and shape edges into cuts, folds, or tabs. To learn more about cut fold tabs, have students watch the Fab@School Maker Studio Cut Fold Tab Tool Tutorial video.

But Wait, There's More

Make your own game pieces!

1. Insert **Library** images or draw your own characters to use as pieces. Make sure that that the outline for the image is black, so that it does not cut or fold in the digital fabricator. You can change this with the **Cut Fold Tab** tool. Create or import two images so both players have their own pieces.

2. Outline the image roughly with the **Line** tool, making sure to include a triangular shape on the bottom of the game piece so it can be inserted into the game board. Double-click or click the first point to make a closed shape. Open the **Cut Fold Tab** tool and change all edges to red **Cut** lines.



3. **Copy** and **Paste** each piece so that there are five copies of each piece, ten in total.

Can you make a game board that can store the game pieces inside?

The game board almost looks like a box, doesn't it? How can you change the game board so it can store the pieces inside? Have fun and experiment!