# **Tinkercad: Engineering an Extraterrestrial**

\*Sections with blue text denote the structure and are fixed\*

\*Black text is editable\*

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### **Liftoff**

### **AoE**

Manufacturing Technology

### **Product Line**

SmartLab HQ

### **Project Starter Title**

Tinkercad: Engineering an Extraterrestrial

**Related Project Starters**

**Tinkercad: Create a Stamp** (4th grade)

**Activity Description:** Use Tinkercad to design and create a stamp.

**The Challenge:** Your challenge is to design a Stamp in Tinkercad using 2D and 3D images and drawings.

**Math Standards:** N/A

**Tinkercad: 3D Design to Size** (5th grade)

**Activity Description:** Learn to draw in 3D with Tinkercad. Use Tinkercad to create your own design, while exploring how scale factor relates to the size of an object, and using powers of ten to convert mextraterrestrial ric measures to enlarge or shrink. Then print your design on a 3D printer.

**The Challenge:** Your challenge is to create your own 3D design using Tinkercad. It can be anything approved by your facilitator, but needs to include a rectangular prism in the design. At the same time, you will explore how scale factor affects the size of an object, and you will use powers of ten to convert mextraterrestrial ric measures to enlarge or shrink. Then, you could print your design on a 3D printer.

**Math Standards:** CCSS.MATH.CONTENT.5.NBT.A.2 - Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

CCSS.MATH.CONTENT.5.NF.B.5.A -

### **Technology**

Tinkercad (https://www.tinkercad.com/)

### **Grade Level**

3rd Grade

### **Math Standards**

**3.G.A.1**

Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

### **Activity Description**

Learn about the features of different shapes, then combine different shapes inTinkercad to design an extraterrestrial character and write a short sotry about your character.

### **Project Description**

In this challenge, students will learn about the features of different shapes, then they will combine different shapes to design their very own three-dimensional extraterrestrial character in Tinkercad and write a short story about their character.

# **The Challenge – Tinkercad: Engineering an Extraterrestrial**

## **The Challenge**

Your challenge is to use Tinkercad to design your own 3D extraterrestrial character. Then, write a short story about it.

INSERT: TITLE: Tinkercad logo

## **What I’ll Learn**

* I CAN descirbe the atributes of shapes.
* I CAN catergorize shapes with shared attributes into groups.
* I CAN use Tinkercad to design a 3D object.
* I CAN write a short story about my extraterrestrial character.

## **Stuff I’ll Need**

* Paper and Pencil
* INSERT: https://www.tinkercad.com/ TITLE: Tinkercad

# **Assignment- Explore – Engineering an Extraterrestrial**

### **Explore – Tinkercad: Engineering an Extraterrestrial**

Explore Tinkercad and its tools. Answer the following questions:

1. *How can Tinkercad be used to create 3D shapes?*
2. *What do I notice about the Tinnkercad workspace?*
3. *What is an extraterrestial?*

**What You Should Know – Tinkercad: Engineering an Extraterrestrial**

### **Important Vocabulary**

* **Attributes** - characteristics or features that shapes share (example: having four sides)
* **Categories –** groups of related things
* **~~Rhombuses~~** ~~-a type of shape with four sides where all sides are equal in length~~
* **Quadrilateral -** a four sided figure (example: a square, a rectangle and parallelograms)
* **Parallelogram** - a parallelogram is a shape that has 4 sides (quadrilateral) with opposite sides that parallel and equal in length
* **Parallel-** two lines that run side by side and never touch each other, no matter how far you extend them
* **Squares -** type of shape with four sides of equal length and four right angles
* **Subcategories -** smaller groups within a larger category (example: rhombuses, rectangles, and squares are a subcatergory within the category of quadrilaterals)
* **2D Shape** - a 2D or two-dimensional shape is a flat object like a circle, square, or triangle.

**Heading:** Extraterrestrial

**Text:** Imagine you're looking up at the sky and wondering if there is life on other planents. Well, there are many people who believe that there are other intelligent beings in the universe, and they call them extraterrestrials.

Extraterrestrials are life forms that are not from Earth. They could be living on other planents in our solar system, or they could be living in other galaxies far, far away. We don't know much about extraterrestrials, but we can imagine that they come in all shapes and sizes. They might look like us, or they might be completely different.

Some people believe that extraterrestrials have already visited Earth, and that they might even be living among us right now. Others believe that they are too far away to ever visit us. But one thing is for sure: the possibility of life on other planents is a really exciting idea.

INSERT: Tinkercad\_Ailen\_Pixabay TITLE: ailen

**Heading:** Shapes

**Sub-Heading:** 2D and 3D Shapes

**Text:** A 2D or two-dimensional shape is a flat object like a circle, square, or triangle that has two-dimensions - length and width. A 3D shape or three-dimensional shape is a solid object like a cube, sphere or cylindar that has three dimensions - length, width and height/depth.

Examples of 2D Shapes

Circle: a circle is a shape that has no sides or corners.It has a continuous round edge.

Triangle: a triangle is a shape that has three sides and three corners.

Square: a square is a shape that has four sides that are all the same length, it also has 4 angles that are all right angles (90 degrees).

Rectangle: a rectangle is is a shape that has four sides and the opposite sides of the shape are equal in length, it also has 4 angles that are all right angles (90 degrees).

Pentagon: A pentagon is a shape that has five sides and five corners.

Hexagon: A hexagon is a shape that has six sides and six corners.

Heptagon: A heptagon is a shape that has seven sides and seven corners.

Octagon: An octagon is a shape that has eight sides and eight corners.

INSERT: Tinkercad\_Shapes\_CLS TITLE: 2D shape examples

Examples of 3D Shapes

Cube:

Sphere:

Cyclndar:

**Heading:** Attributes of Shapes

**Text:** Shapes are grouped by thier characteristics or attributes. Shapes can be grouped by attributes including the number of sides they have, the length of the sides, the size of the angles/corners, or whether or not the sides are parallel. For example, shapes like squares, rectangles, and rhombuses are all quadrilaterals (they all have 4 sides) but the legths of the sides and the types of angles are different. Attributes can also help us see the differences between shapes. For example, a square has four sides and four angles, while a triangle has only three sides and three angles.

**Heading:** Practice Identifying Shapes

**Text:** Identify the shape name and number of sides below, check your answer by clicking each tab.

INSERT: 8 ACCORDIAN START

**Heading:** Tinkercad\_Rectangle\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Rectangle | 4 |

**Heading:** Tinkercad\_Triangle\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Triangle | 3 |

**Heading:** Tinkercad\_Hexagon\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Hexagon | 6 |

**Heading:** Tinkercad\_Parallelogram\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Parallelogram |  |

**Heading:** Tinkercad\_Pentagon\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Pentagon | 5 |

**Heading:** Tinkercad\_RightTriangle\_CLS

**Text:**

INSERT: 2x2 TABLE

|  |  |
| --- | --- |
| **Name of Shape** | **Number of Sides** |
| Right Triangle | **3** |

**Heading:** Name a shape that has four sides. The sides are all the same length. What shape could it be?

**Text:** Square, 4 sides

**Heading:** Name a shape that has 8 sides? It is used to stop traffic.

**Text:** Octatgon, 8 sides

INSERT: 8 ACCORDIAN END

**Career Connection and Real-World Application**

**Heading:** Game Developer

**Text:** *Have you ever wondered how game developers create those amazing virtual worlds you love to explore?* Well, it's all thanks to the power of shapes! Shapes are like a secret language that game developers use to build the things you see in games.

Just like you use words to tell stories, game developers use shapes to create the characters, landscapes, and objects in their games. They carefully choose each shape to create the right look and feel for their game. For example, they might use squares and rectangles to design buildings, circles for characters' faces, and triangles for mountains or other structures.

Shapes are also important for making games work. They help developers to create the rules and boundaries of the game world. For example, a shape might be used to make a platform that characters can jump on, or it might be used to create a wall that characters can't walk through.

INSERT: Tinkercad\_VideoGameCharacter\_Pixabay TITLE: video game character

**Heading:** Carpenter

**Text:** Carpenters use wood and other materials to build things. They use tools like saws and chisels to cut, shape, and join pieces of wood together her to make buildings, furniture, and other objects.

Carpenters are also very creative and can even create custom pieces that are exactly what people want. So if you ever need a special chair or a unique table, just ask a carpenter! Carpenters frequently work on custom projects where specific shapes and sizes are required.

Carpenters are important because they help us build the things we need to live and work. They're like the magicians of wood, making our world a more beautiful and functional place.

**Heading:** Urban Planner

**Text:** Urban planners use shapes to design cities.Urban planners are like architects who design cities. Shapes are very important to their work. They use shapes in many different ways when planning cities.

Imagine a city as a big puzzle. Urban planners are like puzzle masters who put the pieces togextraterrestrial her in the right way. They use shapes to plan the streextraterrestrial s, buildings, parks, and everything in between.

Just like you use different colors when painting a picture, urban planners use different shapes to create different zones in a city. These zones are like neighborhoods with different purposes. For example, a square might be used to mark a zone for living, while a circle might be used to mark a zone for playing.

Urban planners also use shapes to make sure that cities are safe and easy to gextraterrestrial around. They shape streextraterrestrial s in a way that makes it easy for people to walk, bike, or drive. They also make sure that there are enough parks and green spaces for people to enjoy.

INSERT: Tinkercad\_City\_Pixabay TITLE: city

**Assignment- Plan and SMART Goal – Tinkercad: Engineering an Extraterrestrial**

**Plan and SMART Goal – Tinkercad: Engineering an Extraterrestrial**

Before you start your challenge, make a plan for your project and sextraterrestrial a SMART goal. Your goal should be Specific, Measurable, Attainable, Relevant, and Time Based.

1. *What shapes will you use to create your extraterrestrial?*
2. *What tool will your extraterrestrial hold? What is it used for?*
3. *Where does your extraterrestrial? live? What does your extraterrestrial do for work? For fun? What do you want to know about your extraterrestrial?*
4. Write your project SMART Goal: We will use (name of technology) to (dextraterrestrial ailed description) by (due date). We are creating this because (personal interest or purpose).

**Do It! Tinkercad: Engineering an Extraterrestrial**

## **The Challenge**

Your challenge is to use Tinkercad to design your own 3D extraterrestrial character. Then, write a short story about it.

**Project Steps**

1. Plan Your Extraterrestrial
2. Create your Extraterrestrial in Tinkercad
3. Identify thhe Shapes
4. Write a Short Story

**Heading:** Plan Your Extraterrestrial

**Text:** Start by brainstorming what your extraterrestrial character might look like. Consider the number of eyes, limbs, and any unique features you would like your extraterrestrial character to have. Your extraterrestrial character could be slimy, furry, scaly, or have patterns. Your extraterrestrial might have three arms or one eye, it is up to your imagination. Each part of the extraterrestrial character should be represented by a simple shape (circles, squares, triangles, etc.). Sketch your plan out on paper.

INSERT: Tinkercad\_DrawET\_Pixabay TITLE: a girl sketching on paper

**Heading:** Create your Extraterrestrial in Tinkercad

**Text:**

1. Open a new 3D design in Tinkercad.

INSERT: Tinkercad\_NewDesign\_CLS TITLE: open a new design in Tinkercad

1. This is the workplane where you will create your extraterrestrial character on using your sketch. The Tinkercad workplane looks a lot like a piece of graph paper.

INSERT: Tinkercad\_Workspace\_CLS TITLE: Tinkercad workspace

1. On the right hand side of the screen, find the box shape in the Shapes Panel. Left click and drag the box shape on to the workplane.

INSERT: Tinkercad\_BasicShapes\_CLS TITLE: drag the sphere inot the workspace

1. Choose the color of your shape.

INSERT: Tinkercad\_ChooseColor\_CLS TITLE: choose the color

1. You can change the height and width of your shape by using the handles on the bottom of the shape.

INSERT: Tinkercad\_ChangeSize\_CLS TITLE: change the size of the box

1. Give your extraterrestial character a head! Remember, it can be whatever shape you like and whatever color you like.

INSERT: Tinkercad\_AddHead\_CLS TITLE: add a head

1. Now it's time to add your eyes. Remember it is up to you to decide what shape and color (and how many eyes) your exteraterrestial character will have.

INSERT: Tinkercad\_AddEyes\_CLS TITLE: add eyes to your extraterrestrial

1. Add arms, hands, legs to your extraterrestrial character. Be sure to include something for your extraterrestial to hold.

INSERT: Tinkercad\_AddExtra\_CLS TITLE: add other body parts to your model

1. Finally, select all of the objects that make up your extraterrestial. Group them together. This will change the color of all of the objects. Don’t worry, you can change the colors back in the next step.

INSERT: Tinkercad\_GroupObjects\_CLS TITLE: group the objects

1. You can switch back to the original colors by going to Color and selecting “multicolor”.

Take a screenshot of your final extraterrestrial design to upload for your project submission.

INSERT: Tinkercad\_Multicolor\_CLS TITLE: choose “Multicolor” to change the shape colors

**Heading:** Identify the Shapes

**Text:** While looking at the extraterrestrial you have created, identify each of the shapes you used, draw a table and fill in your information. For example, if you used a circle for the extraterrestrial’s eye or a square for it’s head you would fill that in below. You

INSERT: 2x3 TABLE

|  |  |
| --- | --- |
| **Body Part** | **Shape** |
| *eye* | *circle* |
| *head* | *square* |
|  |  |

**Heading:** Write a Short Story

**Text:** Write a short story about your extraterrestrial character. *What are its special abilities, what tool is it holding and why, where does it come from, and what does it like to do?* You will upload your short story for your project submission.

**Assignment- Daily Project Journal – Tinkercad: Engineering an Extraterrestrial**

### **Daily Project Journal –** **Tinkercad: Engineering an Extraterrestrial**

Use this space to answer the following questions every day by collaborating with your partner - this is a group assignment.

1. *What did we do today?*
2. *What did we learn?*
3. *What math did we use?*
4. *What could we have done differently?*
5. *What new questions do we have based on our work today/this week?*
6. *What is our plan for next time?*

**Assignment- Project Submission – Tinkercad: Engineering an Extraterrestrial**

### **Project Submission – Tinkercad: Engineering an Extraterrestrial**

1. Upload a picture of your extraterrestrial character design sketch.
2. Upload a screenshot of your extraterrestrial character.
3. Upload your table of shapes that make up your extraterrestrial character.
4. Upload your short story.
5. Reflect on the following questions:

* *How did understanding the differences and similarities of shapes help you to design your extraterrestrial character?*
* *What was the most challenging/ difficult part of designing your extraterrestrial character in Tinkercad? How did you overcome the challenges?*

1. Revisit your SMART goal. Remember, your goal should be Specific, Measurable, Attainable, Relevant, and Time Based.

* *Did you meextraterrestrial your SMART goal? Why or why not?*
* *How did you manage your time? How could you improve your time management?*
* *Did you have to modify your SMART goal?*
* *What will you do differently next time?*

**Extend Yourself – Tinkercad: Engineering an Extraterrestrial**

**Heading:** Design a Spaceship

**Text:** Design a spaceship for your extraterrestial character using Tinkercad. You will need to consider the shape, size, and features the spaceship might have to accommodate your extraterrestrial character. Use basic shapes like circles, squares, and triangles to create the shape of your spaceship. You can use the "scale" tool in Tinkercad to change the size of your spaceship.

INSERT: Tinkercad\_Spaceship\_Pixabay TITLE: spaceship

**Heading:** Create a Comic Strip

**Text:** Create a comic strip from your short story. Consider using Comic Life or another software to draw your extraterrestrial character in comic form. Speech bubbles and captions are a great way to add dialogue and narration to your comic strip. Speech bubbles are used to show what the characters are saying, while captions are used to provide additional information about the story.

**Heading:** Extraterrestrial Language Exploration

**Text:** Create a simple " extraterrestrial language" using shapes. Think about the things you want to be able to communicate in your extraterrestrial language. *What do you want to be able to say to your extraterrestrial friend? For example, do you want to be able to say hello, goodbye, thank you, and please? Do you want to be able to say things like "I'm happy," "I'm sad," and "I'm hungry"?*

Once you know what you want to communicate, start creating shapes for each word or phrase. This is like using an emoji instead of word. Here are some examples of symbols you could use in your extraterrestrial language:

A circle could represent "hello".

A triangle could represent "goodbye".

A square could represent "thank you".

A star could represent "please".

INSERT: Tinkercad\_SimpleShapes\_Pixabay TITLE: simple shapes

**Heading:** Design a Habitat

**Text:** Design a habitat for your extraterrestrial charcter using Tinkercad. Consider the environment, shelter, and any special features the habitat might have think about your extraterrestrial character's home planet. *What is the environment like there? Is it hot or cold? Is it dry or wet? Are there any plants or animals (real or made up) that should be included?* Once you have a good understanding of your extraterrestrial friend's home planet, you can start to design their habitat. Consider the following factors:

* Shelter: Your extraterrestrial character needs a place to sleep and protect themselves from the elements. This could be a simple structure like a dome or a more complex structure with rooms and windows.
* Environment: If your extraterrestrial character is used to a hot climate, you'll need to design a habitat that can keep them cool. If they're used to a cold climate, you'll need to design a habitat that can keep them warm.
* Special Features: Your extraterrestrial character may have special needs that you need to consider. For example, they may need a special type of food or water, or they may need a place to exercise.

INSERT: Tinkercad\_Habitat\_Pixabay TITLE: pond habitat

|  |  |  |  |
| --- | --- | --- | --- |
| **IMAGE AND RESOURCE INFORMATION**  INSERT: Yellow highlight indicates image/video insert (INSERT: TITLE:)  INSERT: Pink highlight indicates PDF/document insert (INSERT: TITLE:)  INSERT: Orange highlight indicates interactive/widgextraterrestrial insert from custom CLS template (INSERT: TITLE:)  INSERT: Blue highlight indicates link in line with URL and title (INSERT: TITLE:) | | | |
| **Title** | **Alt Text** | **Original URL** | **Date** |
| Tinkercad\_BoyDrawing\_Pixabay | boy drawing on paper | <https://cdn.pixabay.com/photo/2016/06/08/09/19/boy-1443458_1280.png> | 11/17/2023 |
| Tinkercad\_ShapeAttributes\_Pixabay | shapes | [https://cdn.pixabay.com/photo/2016/09/23/19/21/geomextraterrestrial ric-solids-1690273\_1280.png](https://cdn.pixabay.com/photo/2016/09/23/19/21/geometric-solids-1690273_1280.png) | 11/17/2023 |
| Soccer Ball |  | <https://pixabay.com/vectors/football-ball-sport-soccer-game-157931/> | 12/4/2023 |
| Tinkercad\_Ailen\_Pixabay | ailen | https://cdn.pixabay.com/photo/2017/02/01/11/17/alien-2029727\_1280.png | 11/17/2023 |
| Tinkercad\_VideoGameCharacter\_Pixabay | video game character | https://cdn.pixabay.com/photo/2016/03/31/17/48/blue-1293920\_1280.png | 11/17/2023 |
| Carpenter |  | https://cdn.pixabay.com/photo/2012/04/25/00/08/man-41283\_1280.png | 11/17/2023 |
| Tinkercad\_City\_Pixabay | city | https://cdn.pixabay.com/photo/2017/02/01/20/19/administration-2031346\_1280.png | 11/17/2023 |
| Tinkercad\_DrawET\_Pixabay | a girl sketching on paper | https://cdn.pixabay.com/photo/2020/11/10/09/13/child-5729019\_1280.png | 11/17/2023 |
| Tinkercad\_Spaceship\_Pixabay | spaceship | https://cdn.pixabay.com/photo/2020/01/19/15/02/ufo-4778062\_1280.png | 11/17/2023 |
| Tinkercad\_SimpleShapes\_Pixabay | simple shapes | https://cdn.pixabay.com/photo/2021/09/23/02/15/squid-game-6648331\_1280.png | 11/17/2023 |
| Tinkercad\_Habitat\_Pixabay | pond habitat | https://cdn.pixabay.com/photo/2013/07/12/19/29/biotope-154853\_1280.png | 11/17/2023 |
| Tinkercad\_NewDesign\_CLS | open a new design in Tinkercad | [Tinkercad - EXTRATERRESTRIAL \_CLS1.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS1.png?csf=1&web=1&e=aaeAHy) | 11/17/23 |
| Tinkercad\_Workspace\_CLS | Tinkercad workspace | [Tinkercad - EXTRATERRESTRIAL \_CLS2.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS2.png?csf=1&web=1&e=3rVvJt) | 11/17/2023 |
| Tinkercad\_BasicShapes\_CLS | drag the sphere inot the workspace | [Tinkercad - EXTRATERRESTRIAL \_CLS3.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS3.png?csf=1&web=1&e=fpFi2d) | 11/17/2023 |
| Tinkercad\_ChooseColor\_CLS | choose the color | [Tinkercad - EXTRATERRESTRIAL \_CLS4.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS4.png?csf=1&web=1&e=sLm97t) | 11/17/2023 |
| Tinkercad\_ChangeSize\_CLS | change the size of the box | [Tinkercad - EXTRATERRESTRIAL \_CLS5.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS5.png?csf=1&web=1&e=Oa9ydr) | 11/17/2023 |
| Tinkercad\_AddHead\_CLS | add a head | [Tinkercad - EXTRATERRESTRIAL \_CLS6.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS6.png?csf=1&web=1&e=einfvd) | 11/17/2023 |
| Tinkercad\_AddEyes\_CLS | add eyes to your extraterrestrial | [Tinkercad - EXTRATERRESTRIAL \_CLS7.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS7.png?csf=1&web=1&e=JrrfzK) | 11/17/2023 |
| Tinkercad\_AddExtra\_CLS | add other body parts to your model | [Tinkercad - EXTRATERRESTRIAL \_CLS8.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS8.png?csf=1&web=1&e=5DUelz) | 11/17/2023 |
| Tinkercad\_GroupObjects\_CLS | group the objects | [Tinkercad - EXTRATERRESTRIAL \_CLS9.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS9.png?csf=1&web=1&e=X2BrWs) | 11/17/2023 |
| Tinkercad\_Multicolor\_CLS | choose “Multicolor” to change the shape colors | [Tinkercad - EXTRATERRESTRIAL \_CLS10.png](https://clsonlinecom.sharepoint.com/:i:/r/sites/academics/Shared%20Documents/Content/BTS24%20Content%20Writing/2%20Elementary%20School/Tinkercad/Tinkercad%20Project%20Starter%20Assets/Tinkercad%20-%20ET_CLS10.png?csf=1&web=1&e=luXVXI) | 11/17/2023 |
| Checkerboard | Checkerboard | <https://cdn.pixabay.com/photo/2012/04/10/16/57/pattern-26399_1280.png> | 12/14/23 |
| Smartphone | Smartphone | https://cdn.pixabay.com/photo/2016/01/10/22/30/smartphone-1132675\_1280.png | 12/14/23 |
| Whole pizza | Whole pizza | https://cdn.pixabay.com/photo/2022/10/06/22/22/pizza-7503664\_1280.png | 12/14/23 |
| Slice of pizza | Slice of pizza | https://cdn.pixabay.com/photo/2012/04/01/16/51/pizza-23477\_1280.png | 12/14/23 |
| Starfish | Starfish | https://cdn.pixabay.com/photo/2016/03/31/15/13/mer-1293084\_1280.png | 12/14/23 |
| Honeycomb | Honeycomb | https://cdn.pixabay.com/photo/2012/05/02/17/41/bees-45790\_1280.png | 12/14/23 |
| Stop Sign | Stop sign | https://cdn.pixabay.com/photo/2017/09/05/10/18/stop-2717058\_1280.png | 12/14/23 |
| Dice | Dice | https://cdn.pixabay.com/photo/2012/04/05/01/24/dice-25637\_1280.png | 12/14/23 |
| Prism | Prism | https://cdn.pixabay.com/photo/2023/07/23/06/46/prism-8144510\_1280.png | 12/14/23 |
| Shoe box | Shoe box | https://cdn.pixabay.com/photo/2017/10/18/14/31/box-2864333\_1280.png | 12/14/23 |
| Soccer ball | Soccer ball | https://cdn.pixabay.com/photo/2013/07/13/10/51/football-157931\_1280.png | 12/14/23 |
| Basketball | basketball | https://cdn.pixabay.com/photo/2013/07/13/11/52/basketball-158875\_1280.png | 12/14/23 |

**Heading:** 3D Shapes

**Text:** Imagine you're drawing a shape on a piece of paper. That's a 2D shape! It has two dimensions, which means it has length and width. You can't reach out and touch it because it's flat.

INSERT: Tinkercad\_BoyDrawing\_Pixabay TITLE: boy drawing on paper

Now, imagine you're building a shape with blocks. That's a 3D shape! It has three dimensions, which means it has length, width, and height. You can reach out and touch it because it has depth.

All shapes have sides, but 3D shapes have faces, too. Faces are the flat parts of a 3D shape. For example, a cube has six faces, a sphere has one face, and a cylinder has three faces.

3D shapes can be all sorts of different shapes, like cubes, spheres, cylinders, pyramids, and cones. They can be big or small, tall or short, and wide or narrow. They can also be curved or straight. No matter what they look like, though, all 3D shapes have the same thing in common: three dimensions.

2D shapes and 3D shapes are both important parts of our world. We use 2D shapes to draw pictures, design buildings, and create maps. We use 3D shapes to build houses, make sculptures, and design toys.

In other words, a 3D design is like making something that you can hold and see from all sides, not just on a flat piece of paper.In addition to drawing a picture of your extraterrestrial character on paper, you're building it on the computer using special software, in this case, Tinkercad,

**~~Heading:~~** ~~Attributes of Shapes~~

~~INSERT: Tinkercad\_ShapeAttributes\_Pixabay TITLE: shapes~~

**~~Text:~~** ~~Shapes can be described by thier attributes number of sides, corners, and angles~~

~~Square: A square is like a special kind of rectangle. It has four sides that are all the same length, and all its angles are right angles (90 degrees). A sphere is a 3D shpae made up of squares.~~

~~Rectangle: A rectangle is like a longer square. It also has four sides, but the opposite sides are equal in length, and all angles are right angles. It has opposite sides that are parallel and of equal lengt~~h

~~Circle: A circle is round and has no sides or corners.It has a continuous round edge.~~

~~It's like a pizza or a cookie!~~

~~Triangle: A triangle has three sides and three corners. It can look like a slice of pizza, too!~~

~~Parallelogram: a quadrilateral with opposite sides parallel and equal in length, for example, a square~~

~~Pentagon: A pentagon has five sides and five corners. It looks a bit like home plate in baseball.~~

~~Hexagon: A hexagon has six sides and six corners. It's like a stop sign!~~

~~Octagon: An octagon has eight sides and eight corners. It's similar to a stop sign but with more sides.~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Shape | Definition | Example | Number of Sides | Number of Angles |
| Square | All of the sides are the same length, and all its angles are right angles (90 degrees); a parallelogram | Chessboard    INSERT: <https://cdn.pixabay.com/photo/2012/04/10/16/57/pattern-26399_1280.png> TITLE: Checkerboard | 4 | 4 |
| Rectangle | a longer square. It also has four sides, but the opposite sides are equal in length, and all angles are right angles. It has opposite sides that are parallel and of equal length | Smartphone screen    INSERT: <https://cdn.pixabay.com/photo/2016/01/10/22/30/smartphone-1132675_1280.png> TITLE: Smartphone | 4 | 4 |
| Circle | round and has no sides or corners.It has a continuous round edge | A whole pizza    INSERT: <https://cdn.pixabay.com/photo/2022/10/06/22/22/pizza-7503664_1280.png> TITLE: Whole pizza | 1 | 1 |
| Triangle | has three sides and three corners. | A slice of pizza  INSERT: <https://cdn.pixabay.com/photo/2012/04/01/16/51/pizza-23477_1280.png> TITLE: Slice of pizza | 3 | 3 |
| Pentagon | five sides and five corners | Starfish  INSERT: https://cdn.pixabay.com/photo/2016/03/31/15/13/mer-1293084\_1280.png TITLE: Starfish | 5 | 5 |
| Hexagon | Six sides and six corners | Honeycomb  INSERT: https://cdn.pixabay.com/photo/2012/05/02/17/41/bees-45790\_1280.png TITLE: Honeycomb | 6 | 6 |
| Octagon | Eight sides and eight corners | Stop sign  INSERT: https://cdn.pixabay.com/photo/2017/09/05/10/18/stop-2717058\_1280.png. TITLE: Stop Sign |  |  |

|  |  |  |
| --- | --- | --- |
| 2D Shape | 3 D Shape | Example |
| Square | Cube | Dice    INSERT: <https://cdn.pixabay.com/photo/2012/04/05/01/24/dice-25637_1280.png> TITLE: dice |
| triangle | Pyramid | Prism  INSERT: https://cdn.pixabay.com/photo/2023/07/23/06/46/prism-8144510\_1280.png TITLE: prism |
| Rectangle | Cuboid | Shoe box    INSERT: <https://cdn.pixabay.com/photo/2017/10/18/14/31/box-2864333_1280.png> TITLE: shoe box |
| hexagon | hexahedron | Soccer ball  INSERT: https://cdn.pixabay.com/photo/2013/07/13/10/51/football-157931\_1280.png TITLE: Soccer ball |
| Circle | Sphere, cylinder | Basketball  INSERT: https://cdn.pixabay.com/photo/2013/07/13/11/52/basketball-158875\_1280.png TITLE: basketball |