

Consult 4 Kids Lesson Plans

Component	Science
Grade Level	K-5
Lesson Title	Building and Taking Apart
Focus	Imagineering

Materials: Building blocks or LEGOS; Several bags of small marshmallows, several boxes of toothpicks

Opening

State the Objective

The objective of this lesson is to create objects and then take them apart.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “What is the best part of building? Building or taking it apart? Share your earliest memory of building something.” (LEGOS, building blocks)

“What projects do adults build?” (Buildings, bridges, roads, homes, cars, planes, boats, rockets, space ships, and robots)

“When you become an adult, which project would you like to help build?”

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

1. Have students brainstorm the different jobs involved in building something, for example building a road. (Engineers, purchasing agent, human resources, construction supervisors, construction workers, and others)
2. Have students assign themselves to various jobs.
3. What jobs would be needed to take apart a road? Are the jobs the same?
4. Why do kids like to build things?
5. Provide students with building blocks or LEGOS.
6. Have them develop a plan and create something with everyone in the group having a part in the process.
7. Set a time limit.
8. Share with classmates.

*Activity → Teachable Moment(s) *throughout*

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “Is engineering part of science?”
- **Leader:** “Yes. Engineering is taking materials and using science to create something.”

Students Practice (“You Do”)

1. Divide the class into groups.
2. Discuss safety when using toothpicks.
3. Provide each group with plenty of miniature marshmallows and toothpicks.
4. Teach students to make 2-dimensional shapes; triangles, squares, and pentagons.
5. Next, introduce 3-dimensional shapes. What happens when you put three triangles

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<p>together; four, six, or more triangles?</p> <ol style="list-style-type: none"> 6. Make as many 3-dimensional shapes as possible. 7. Have groups create individual projects or one project. 8. Share projects. 9. Now, take apart the project. 10. If desired, provide a marshmallow treat when finished. 	
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Closing

Review

Sample Review: “As a team, we built a LEGO project. In our groups, we made geometric shapes with marshmallows and toothpicks.”

Review:

Debrief

Three Questions

1. What is the most important thing about working in a group?
2. How did you go about including everyone?
3. If you were to try this again, what might you do differently?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: “Next time, before I begin the marshmallow project, I will model with students how to make a triangle, square and pentagon. We also learned that the triangle shape is stronger than a square.”

Your Reflection:

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Component	Science
Grade Level	K-5
Lesson Title	Creativity
Focus	Imagineering

Materials: Drawing paper, crayons

Opening

State the Objective

The objective of this lesson is to put creativity in action.

Gain prior knowledge by asking students, “What do you know about _____?”

“Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes and having fun.” Mary Lou Clark.

“Every act of creation is first of all an act of destruction.” Pablo Picasso

Ask students, “Tell about a time when you created something. Did it work out for you? How did you use what you created?”

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

1. Close your eyes and think about something you like.
2. Imagine exotic fish, roller coasters, the origin of the universe, historical events, heroes, or scary things. Now choose one.
3. Let’s say that you choose “exotic fish.”
4. Always add “Magic.” In your imagination there are no rules. Fish can talk.
5. What would happen if your fish made a friend with a car, plane, or camera?
6. With your partner, think of all sorts of adventures your exotic fish could have.
7. Create a skit with the fish and his new friend. “Once upon a time there was this fish.” Tell about a problem the fish has, and how he solved the problem.
8. Share your skits with classmates.

*Activity → Teachable Moment(s) *throughout*

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “What happens if you can’t think of anything creative”
- **Leader:** “Goof around and the ideas will come to you.”

Students Practice (“You Do”)

First Activity:

1. Listen to your “head chatter.”
2. Sit quietly. Listen to all the sounds in your environment. (Buzz of an overhead light, air conditioner, your own breath, someone laughing, footsteps)
3. The more you focus on listening, the less “head chatter” you will hear.

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4. Listen for your thoughts, ideas and what others have to say.

Second Activity:

1. Provide students with paper and crayons.
2. Ask students to draw the feeling of creativity
3. Draw what can spark their curiosity. (Words, music, people, challenges)
4. Turn the paper over.
5. Choose a theme park. List all the rides in that theme park.
6. Make a combination of two rides. (Indiana Jones and Peter Pan).
7. Make a connection between the two rides. What do they have in common? Why are they so popular? Why would they never get along?
8. Share ideas with classmates.

Closing

Review

Sample Review: "We practiced opening our minds so ideas would come in. We also made a list of theme park rides, and made a connection between the two rides."

Review:

Debrief

WHI?

Ask the following three questions:

1. What is something you learned about being curious?
2. What is something that sparks your curiosity?
3. How can we make these activities better next time?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: "Kids really got into the theme-park ride activity."

Your Reflection:

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Component	Science
Grade Level	K-5
Lesson Title	Curiosity
Focus	Imagineering

Materials: Students white boards, markers, erasing cloths, paper clips

Opening

State the Objective

The objective of this lesson is to put curiosity in action.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “What is Imagineering? (People who dream an idea, work with creative challenges, and find a practical way to bring the idea to life.) What are examples of Imagineering in real life? (Theme park rides, animators, artists, musicians, video game creators, toy makers, authors)”

“What does it mean to be curious? (the desire to know something; asking questions) What are key words to use when asking questions? (Who, what, where, when, why and how)”

“Life must be lived and curiosity kept alive.” Eleanor Roosevelt

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

1. Have students write the word IMPOSSIBLE on their white boards.
 2. Erase the IM.
 3. What word is left? POSSIBLE.
 4. Talent is about the “possible.” A curious mind is always working.
 5. Let’s begin finding all the possibilities in our minds!
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1. Get started.
 2. Think of something that interests you.
 3. Start with a question. Who, what, where, when, why or how.
 4. Imagine how many different ways someone can jump fifty feet into the air.
 5. Brainstorm building a device that will allow you to jump fifty feet.
 6. Have students work together. Ask, “How?” “Why?” and “What Other Way?”
 7. Share different ideas.

*Activity → Teachable Moment(s) throughout

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “What if our jumping machine can only jump 10 feet?”
- **Leader:** “Ask more questions. What other way can we design the machine to make it jump higher?”

Students Practice (“You Do”)

1. Divide students into small groups.

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2. Provide students with paper clips.
3. Create a competition.
4. Ask students to design as many uses as possible for paper clips.
5. Share inventions.
6. Determine a competition winner!

Closing

Review

Sample Review: "We tried to invent a jumping device that would let you jump 50 feet in the air. We also made all sorts of objects out of paper clips."

Review:

Debrief

WHI?

Ask the following three questions:

1. What were some of the questions that came up in your group?
2. How did you go about including everyone?
3. If you were to try this again, what might you do differently?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: "Kids really had fun trying to create uses for paper clips."

Your Reflection:

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Component	Science
Grade Level	K-5
Lesson Title	Divergent Thinking
Focus	Imagineering

Materials: White boards, markers, erasing cloths, books, various random objects

Opening

State the Objective

Divergent thinking is a thought process to generate creative ideas by exploring many possible solutions. The objective for this lesson is to teach students to think of many solutions to problems.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “Can you think of something you do that has rules? (Games, sports, recipes) What would happen if you changed the rules in a game? Would the game be as fun? Would it be more fun?” Divergent thinking happens when you shift your point of view (tweak the rules).

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

First Activity: Ant’s Point of View

1. Ask students, “What is a point of view?” (an opinion)
2. Have students give examples of the point of view of an ant. (Human legs look like tall trees. This grain of sand is **so** heavy!)
3. Ask students to draw the world from the point of view of an ant.

Second Activity: Wrong Feet

1. Talk about when a habit has a point of view. (Every day I brush my teeth at the same time. What would happen if I brushed at a different time? How many different times could I brush my teeth?)
2. “Do we wear our shoes on the same feet out of habit?”
3. Ask students to take off their shoes and put them on the wrong feet. Take a few steps.
4. “Do you feel something different? Could you wear your shoes on the wrong feet for an hour? How many different ways could you think of to wear your shoes?”

Third Activity: Upside Down

1. Turn something upside down. Check it out.
2. Have students talk with their partners about what they see underneath the object.
3. Make a list of all the things you see underneath the object.

***Activity → Teachable Moment(s) throughout**

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “How does divergent thinking help us when we do a Science experiment?”
- **Leader:** “Think of how many ways you can get the same result from the experiment. There is not just one right answer.”

Students Practice (“You Do”)

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Fourth Activity: Right to Left

1. Students work in partner-pairs.
2. Provide students with a book.
3. Practice reading left to right instead of right to left.

Fifth Activity: Transforming Objects

1. Divide students into small groups.
2. Provide random objects on a table such as a can opener, box of tissues and a sock.
3. Each student chooses an object. They have 15 seconds to think about changing the object into an unrelated thing. For example, the student chooses the can opener. You could remove the turning key and rotating wheel. With the two grippers you now have a pair of pliers or chopsticks!
4. Share ideas with classmates.

Closing

Review

Sample Review: "We did four activities. Tomorrow we'll schedule Reading Right to Left because we ran out of time."

Review:

Debrief

Three Questions

1. What is divergent thinking?
2. What skills did you use when you walked with your shoes on the wrong feet?
3. How can you use what you learned in real life?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: "This was the craziest science lesson yet. The kids are getting the idea of divergent thinking when they transformed objects into unrelated objects. It was fun to watch them trying to figure it out."

Your Reflection:

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Component	Science
Grade Level	K-5
Lesson Title	Dream and Go
Focus	Imagineering

Materials: One large dice, drawing paper, crayons

Opening

State the Objective

The objective of this lesson is to let our minds wander, create dreams, and act on the dreams.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “What do you dream about?” Have students fill in the blank . . . Someday I want to _____. The leader should fill in the blank also. What are synonyms to the word “dream?” (Wish, goal, hope, ambition, desire, think, and fantasize) “Have any of your dreams come true?”

“I dream of painting and then I paint my dream.” Vincent Van Gogh

Ask students, “What connection do you have with Vincent Van Gogh and dreaming?”

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

Brain Blast

1. Have students play Brain Blast.
2. Have students generate topics in which they are interested. Some theme topics might be clothing, nutrition, seasonal activities, feelings, fitness, authors, sports, astronomy and countries.
3. You need a large die and a list of topics.
4. Divide the group into two teams and roll the die.
5. The number that is rolled will be the number of words that a team has to come up with for a particular topic.
6. Teams get a point for each word appropriate to the topic.
7. Students generate ideas in rapid fire, ready for the next roll of the die.

Famous People That Had a Dream

1. Ask students to think of great dreamers. (Walt Disney taught the rest of us to dream; Martin Luther King said that all races will become equal; Jim Henson, a puppeteer, created The Muppets; Albert Einstein said that imagination is more important than knowledge.)
2. Provide them with drawing paper. Have students draw the famous person and their dream.

*Activity → Teachable Moment(s) *throughout*

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “What does dreaming an idea have to do with science?”
- **Leader:** “Robert Goddard, the Father of Modern Rocketry said, “It is difficult to say what is impossible, for the dream of yesterday is the hope of today and the reality of tomorrow.”

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Students Practice (“You Do”)

1. Divide the class into groups.
2. This is a problem solving game that encourages students to think and work together as a group.
3. Students pick a problem out of a paper bag.
4. Think of as many solutions to the problem as possible.
5. Here are a few problems:
 - All plastic bags have been banned. Think of ways for people to carry their purchases to their homes.
 - There are no more cell phones. How can people communicate with each other?
 - Books are a thing of the past. How can teachers teach students how to read?
 - School is now open for 300 days a year, instead of 180 days. What new subjects should children learn?

Closing

Review

Sample Review: “We played two games - Brain Blast and a Problem Solving Game.”

Review:

Debrief

Three Questions

1. What was your key learning from this activity?
2. How can you use this learning in your real life?
3. What would you change about this activity to make it better?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: “In the Problem Solving Activity, students wanted to think of their own problems. Next time I will give them time to do this.”

Your Reflection:

Modification of Lesson: Introduce strategy games such as Chess and Checkers to your students. These games are fun brain exercises.

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Component	Science
Grade Level	K-5
Lesson Title	Inspiring New Approaches
Focus	Imagineering

Materials: Various objects found in the classroom, magnifying glasses if available

Opening

State the Objective

The objective of this lesson is to find new approaches to the ordinary.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “What are words that build energy and make things possible? (Will, can, like, love, do, make, be, happen, and build.) What are words that contribute nothing to a brainstorming session?” (Try, maybe, might, should, could, sort of, kind of, not sure, and but)

“Shoot for the moon. Even if you miss, you’ll land among the stars.” Les Brown

Ask students to explain the meaning of the quote. Have someone draw a picture of the quote on the white board.

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

First Activity: Imaginary Baseball

1. Divide the group into two teams, assign positions, determine the batting lineup, and start the game.
2. Assign an umpire.
3. The bat and ball are imaginary.
4. The pitcher throws, the batter swings, and everybody knows if he made a strike or hit a line drive.
5. When the shortstop throws to first base, is the runner out?
6. Continue play.
7. For variety, choose a game appropriate to the age-level of students.
8. Ask students, “How is this game a new approach to the ordinary?”

Second Activity: Gibberish Talk

1. Divide students into partner-pairs.
2. The first player tells his or her partner about all the terrible things that happened that day in gibberish (nonsense language).
3. Ask students to sound upset, use hand and body motions to tell how bad it was.
4. When finished, the partner retells the story in English.

*Activity → Teachable Moment(s) *throughout*

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “Do people talk in gibberish in real life?”
- **Leader:** “In some movies you see aliens or other characters talking in unknown languages that are nonsense to us. Are you able to make sense of what they are saying?”

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Students Practice (“You Do”)

Third Activity: 100 Details

1. Students work in small groups.
2. Provide students with an everyday object – apple, scissors, marker, hand sanitizer bottle, or a box of crayons.
3. Students look closely at the object.
4. While group members brainstorm, one student in the group writes down as many details as possible that the group sees.
5. When students hit a roadblock, ask them to look more closely. Provide magnifying glasses.
6. Remind students of words that will help them complete the project: will, can, like, love, do, make, be, happen, and build. The idea is to inspire students to find new approaches to just looking at the object.

Closing

Review

Sample Review: “We played Imaginary Baseball, talked using gibberish, and looked closely at an object.”

Review:

Debrief

Likes and Dislikes

Create a chart. List what students liked and what students didn’t like about the activity. Ask what they would do to make the activity better next time.

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: “Kids gave up after a bit when they were looking for details in the classroom object. Next time I will set a time limit or choose a student to be the coach to encourage them to keep looking.”

Your Reflection:

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Component	Science
Grade Level	K-5
Lesson Title	Keep the Door Open
Focus	Imagineering

Materials: Find random items in the classroom, in the desk drawer, in the car, in a junk drawer; drawing paper and crayons or white boards and markers

Opening

State the Objective

The objective of this lesson is to help students, when stuck on a science project, to get back on track and become problem solvers again.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students, “What kinds of problems make you frustrated? What have you tried to do to solve the problem?”

The best ideas come to you when they have had time to hang around in your head for awhile. Talk to other people about your challenges. Then the light comes on. You are on your way to solving your challenge.

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

First Activity: Arrange Objects to Form Something

1. Have students choose five random objects from around the room.
2. Demonstrate for students. Ask what can be made from these objects.
3. Can they be assembled to make a dog, a car, or something else?
4. How many ways can they be arranged?
5. Now, divide the class into groups.
6. Provide each group with five random objects.
7. Students brainstorm how they can be arranged to form something.
8. How many ways can they be arranged?
9. Have students share what they have created.

Second Activity: Who Does Science?

1. Provide students with drawing paper and crayons or white boards and markers.
2. Ask students, “Who does Science?”
3. Have students draw a picture of a typical scientist.
4. Ask, “Who is missing from your drawings of a scientist?” (Students, elderly people, family members people with disabilities)
5. Talk about career pathways in Science: mathematician, chemist, engineer, astronaut, pilot, marine biologist, and inventor.

*Activity → Teachable Moment(s) *throughout*

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “All this thinking is making me tired. I’m not used to it.”
- **Leader:** “Congratulations! You are your way to becoming a creative thinker. Who knows? We may read about you in our Science book in fifteen years.”

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Students Practice (“You Do”)

Third Activity: Double Doodle

1. This activity will help students focus on left and right awareness.
2. Ask students, “What is a doodle?” (Drawing, sketch, picture, squiggle)
3. Provide students with white boards and markers and/or use the classroom white board.
4. Using their dominant hand, have students practice making doodles.
5. Have students doodle in the air with their dominant hand.
6. Encourage innovation and experimentation.
7. Now, ask students to use both hands and draw a doodle at the same time.
8. Begin with actual shapes: circles, triangles, stars, hearts, trees, or faces.
9. Double Doodle with “in,” “out,” “up,” and “down.”

Closing

Review

Sample Review: “First we arranged objects to form something. Then we drew a picture of a typical scientist. Finally we learned how to Double Doodle.

Review:

Debrief

Three Questions

1. What is the most important thing about double doodling?
2. How do these activities help Keep the Door Open to ideas in Science?
3. If you had more time, what would you have liked to have spent more time on?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: “It was not easy for kids to arrange random objects into something. I know we should do more activities like this to exercise their brains!”

Your Reflection:

Consult 4 Kids Lesson Plans

Component	Science
Grade Level	K-5
Lesson Title	Unrelated Images
Focus	Imagineering

Materials: Drawing paper, pencils, crayons

Opening

State the Objective

The objective of this lesson is to let absolutely ridiculous ideas spark invention.

Gain prior knowledge by asking students, “What do you know about _____?”

Ask students to share a time when they had a dream in which there were a lot of parts that had nothing in common. Do they remember the book, “Cloudy with a Chance of Meatballs,” by Judi Barrett. In this story the weather comes three times a day, at breakfast, lunch and dinner. The rain is juice and soup. Snow is ice cream, and the wind brings hamburgers. What items in the story have nothing in common? (rain/juice and soup)

Content (the “Meat”)

Instruction / Demonstration (“I do” – “We do”)

First Activity – Weird Combinations

1. Have students work in partner-pairs.
2. Say a few everyday items.
3. Students must attach something that has nothing to do with the object. For example, the word is “boat.” The weird object is Zumba.
4. Here are a few objects: grizzly bear, oak tree, and gravy.
5. Students combine these words and create something ridiculous.

Second Activity – Different Point of View

1. Fold the paper in half.
2. On one half of the paper, sign your name with your normal hand.
3. On the other half, sign your name with your other hand.
4. Pay attention how easily you can write the first signature and what effort it took to use your other hand. How is this learning like creating?

***Activity → Teachable Moment(s) throughout**

Tip: Teachers, listen for questions that begin with “what” or “how.”

- **Student:** “What does all of this have to do with Science?”
- **Leader:** “In Science we use curiosity, creativity and weird combinations to come up with science experiments.”

Students Practice (“You Do”)

Third Activity: What if?

1. Divide the students into partner-pairs.
2. To help inspire students, give them a picture book.

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| <ol style="list-style-type: none"> 3. Ask their own, "What if?" questions. What will make the most magic happen? 4. Write down the "What if" questions. For example, "What if we drew the Mona Lisa and dressed her in a chimpanzee suit?" 5. Think of positive answers to each question. "I think Mona Lisa in a chimpanzee suit will get laughs especially if she is eating a banana!" 6. Continue with questions and answers. Let the ideas flow. | |
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Closing

Review

Sample Review: "We had fun with weird combinations. We practiced writing with our left hands. At the end, we asked "What if" questions."

Review:

Debrief

Likes and Dislikes

Create a chart. List what students liked and what students didn't like about the activity. How would they change the activity to make it better?

Reflection (Confirm, Tweak, Aha!)

Sample Reflection: "I think we need more practice creating weird combinations. I would extend the activity by having students tell stories using their weird combinations."

Your Reflection: