# Innovation Challenge Cards

by Dotty's Place

**Encouraging flexible thinking, problem-solving, and creative design**

These Innovation Challenge Cards are designed to support open-ended exploration and innovative thinking in young learners. Rather than focusing on building a single "right" solution, the challenges invite children to test ideas, respond to limitations, and improve their designs over time.

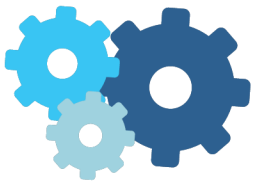
The prompts are intentionally broad and adaptable. They can be used with a wide range of materials and are appropriate for whole-class exploration, small groups, enrichment clusters, or individual extension work. Many challenges naturally lead to redesign and reflection, making them especially useful for students who benefit from deeper thinking or additional challenge.

Teachers and caregivers are encouraged to observe, ask questions, and spotlight interesting strategies as students work. The goal is not a perfect product, but thoughtful experimentation, perseverance, and creative problem-solving.

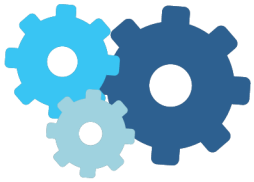
## How to Use

### Ways to Use These Cards

- Offer one challenge to a small group or enrichment cluster
- Allow students to choose from two or three challenges
- Use the same challenge over multiple sessions, encouraging redesign
- Pair with a reflection or design journal to document thinking
  (See Innovation Recording Sheet)
- Use for early finishers or independent exploration time



**Design something that can stand up on its own, even when conditions change.**



*(What happens if the surface moves or the base changes?)*

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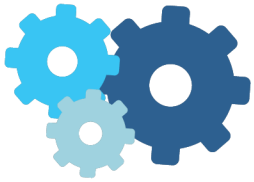
**Create something that can move without being pushed by your hands.**



*(Think about cause and effect.)*

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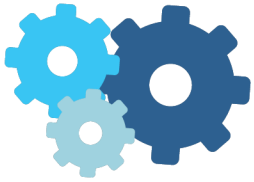

**Design a structure that is taller than it is wide.  Explain how you kept it stable.**

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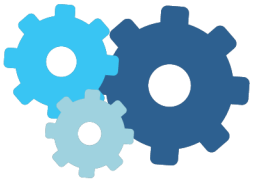
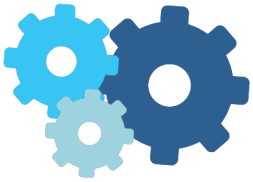
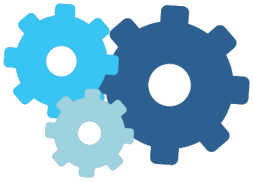


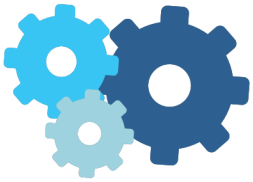
Build something that can hold or carry another object.  Then, test its strength.



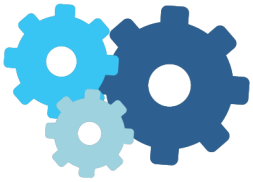
Create a shelter that protects something small.  Then improve it after testing.



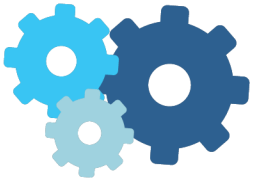
Design something using only two types of materials.  Explain why you chose them.



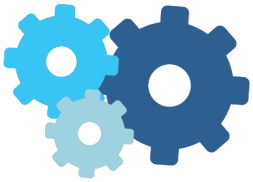
Build something that can be taken apart and rebuilt in a different way.



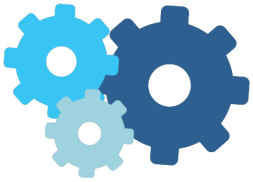
Create a tool that helps solve a real problem in the room.



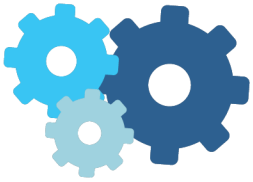
Build something that can roll, slide, or spin. Then change one part and observe what happens.



Design something that would work in a new environment (space, water, wind, etc.).



Redesign something you already built after noticing what didn't work the first time.



Create something no one else in the room has made before.  Explain what makes it unique.

Optional Backside of Card

# Innovation Challenge Card

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# Innovation Challenge Card

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# Innovation Challenge Card

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# E.D.P.  Innovation Recording Sheet

Name: _____
Date: _____
Challenge: _____

**1. PLAN – What is my idea?**
What am I trying to create or solve?
My plan (draw or write):

**2. BUILD & TEST – What happened when I tried it?**
What did I do?  What did I notice?
What I tested:  _____

What happened: _____
_____

**3. NOTICE – What worked and what didn't (yet)?**
Check all that apply and explain one.
□ It stayed strong
□ It moved
□ It fell over
□ It worked better than I expected
□ It didn't work the way I planned

Something that worked: _____
_____

Something that didn't work (yet): _____
_____

# E.D.P.  Innovation Recording Sheet

**4. IMPROVE – What will I change next time?**

How can I make it better?

My improvement idea: _____

_____

_____

**5. REFLECT – What did I learn?**

Finish one sentence:

One thing I learned is _____.

Next time, I would _____.

**Finished Product:**

Teacher / Coach Notes:

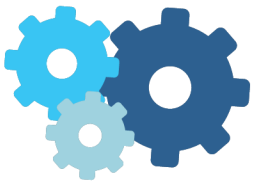
_____

_____

_____

_____





These Innovation Challenge Cards are designed to support flexible thinking, problem-solving, and iterative design. The challenges are intentionally open-ended and may be revisited multiple times. Students are encouraged to test ideas, notice outcomes, and refine their designs rather than aim for a single "correct" solution.

Use this reference page to help identify areas of focus, guide questioning, and connect student work to instructional goals.

## Challenge Focus & Instructional Notes

**Design something that can stand up on its own**
**Focus:** balance, stability, testing variables
**Teacher Notes:** Encourage students to change one variable at a time and observe what happens when conditions shift.

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**Create something that can move without being pushed**
**Focus:** cause and effect, motion
**Teacher Notes:** Ask students what caused the movement and how changing materials or placement affected the outcome.

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**Design a structure that is taller than it is wide**
**Focus:** structure, proportion, planning
**Teacher Notes:** Invite students to explain how they kept the structure stable as it grew taller.

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**Build something that can hold or carry another object**
**Focus:** strength, support, load-bearing
**Teacher Notes:** Encourage testing with different objects and noticing where designs succeed or fail.

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**Create a shelter that protects something small**
**Focus:** protection, design constraints
**Teacher Notes:** Discuss what "protection" means and how designs improve after testing.

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**Design something using only two types of materials**
**Focus:** constraints, material properties, decision-making
**Teacher Notes:** Ask students to justify material choices and reflect on limitations.

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## Challenge Focus & Instructional Notes (Cont.)

**Build something that can be taken apart and rebuilt**
**Focus:** iteration, flexibility
**Teacher Notes:** Highlight how redesign leads to new ideas rather than starting over.

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**Create a tool that solves a real problem in the room**
**Focus:** real-world application, innovation
**Teacher Notes:** Encourage students to identify the problem clearly before building.

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**Build something that can roll, slide, or spin**
**Focus:** motion, experimentation
**Teacher Notes:** Prompt students to change one feature and observe how movement changes.

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**Design something that works in a new environment**
**Focus:** adaptation, systems thinking
**Teacher Notes:** Ask how environmental changes affect design choices.

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**Redesign something after noticing what didn't work**
**Focus:** reflection, improvement
**Teacher Notes:** Normalize "not yet" moments and celebrate thoughtful changes.

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**Create something no one else has made**
**Focus:** originality, confidence
**Teacher Notes:** Invite students to explain what makes their design different and why they made those choices.

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> "Innovation begins when students are given space to think, test, and try again."