Penny's PROJECT LAB

Teacher Resource

Lesson 9 of 28

# Identifying Risks and Backup Plans

**Prepare for the unexpected!**

EXPLORE

DISCUSS

PLAN

CREATE

APPLY

TASKS

SCHEDULE

MILESTONES

DEPENDENCIES

RESOURCES

COMMUNICATION




## Project Focus

- Identify Risks
- Assess Impact
- Backup Plans

**My Project Plan**

| Task | Who? | Start | End | ☑ |
|---|---|---|---|---|
| 1. Plan | | | | ☐ |
| 2. Design | | | | ☐ |
| 3. Build | | | | ☐ |
| 4. Test | | | | ☐ |
| 5. Present | | | | ☐ |

PM

**Grade Range**
K – 5

**Estimated Time**
35 – 50 minutes

**Key Concept**
Tasks, Timeline, Milestones
Sequencing and Planning

**STEM Connection**
Engineering Design
Systems Thinking

# Teacher Overview

Every project includes uncertainty. A risk is something that might happen and affect the project. Some risks create problems; others create opportunities. This lesson focuses on spotting potential problems early, deciding which ones deserve attention, and making practical backup plans. Students learn to respond thoughtfully rather than worry about everything that could go wrong.

## Learning Objectives

• Explain the difference between a risk (might happen) and an issue (already happened).

• Identify risks that could affect a classroom project.

• Use simple likelihood and impact ratings to prioritize risks.

• Choose a prevention step and a backup response for an important risk.

> **Penny says:** “A great plan includes thinking ahead. We cannot stop every surprise, but we can prepare, work together, and make a new plan when we need one!”

## Key Vocabulary

| WORD | KID-FRIENDLY MEANING |
|---|---|
| Risk | Something uncertain that might happen and affect the project. |
| Issue | A problem that is happening now or has already happened. |
| Likelihood | How likely something is to happen. |
| Impact | How much something could affect our project. |
| Prevention | Something we do now to make a problem less likely. |
| Backup plan | What we will do if the risk actually happens. |

# Lesson Plan: Think Ahead!

**Duration:** 45 minutes  **Materials:** sticky notes, pencils, worksheet, sample project scenario.

## 1. What if? — 5 minutes

Introduce a class outdoor reading celebration. Ask: “What might make the day harder?” Gather examples such as rain, missing books, or fewer helpers than expected.

## 2. Risk or issue? — 7 minutes

Compare “It might rain tomorrow” (risk) with “It is raining right now” (issue). Have students sort two or three additional examples.

## 3. Which risks matter most? — 8 minutes

Explain likelihood (low, medium, high) and impact (small, medium, big). Compare a missing pencil with severe weather for an outdoor event. Not every risk needs the same attention.

## 4. Risk Detective Challenge — 15 minutes

Teams choose a project from Lessons 6–8 and complete the Risk & Backup Plan worksheet. Identify three risks, rate each, and plan a prevention step and a backup response for the most important risk.

## 5. Change the plan — 10 minutes

Announce that one risk has happened. Teams share their backup plan and decide what to communicate to teammates and stakeholders.

## Discussion Questions

- Can we predict every problem?
- Why is it useful to prepare before a problem happens?
- How is preventing a risk different from responding to it?
- Who should know when a risk becomes a real issue?

> **Duke’s Backup Plan Challenge:** Find one risk that could stop the team from finishing. What is your Plan B?

# Student Worksheet: Risk & Backup Plan

Name: _____ Date: _____

**Project:** _____

| # | WHAT MIGHT HAPPEN? | LIKELIHOOD | IMPACT |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

**Rating guide:** Likelihood = Low / Medium / High. Impact = Small / Medium / Big.

**OUR MOST IMPORTANT RISK**

Risk number: _____

**Prevention:** What can we do now to make it less likely?

_____

**Backup plan:** What will we do if it happens?

_____

**TEAM CHECK**

Who will watch for this risk? _____

Who should we tell if it happens? _____

# Reflection & Quick Assessment

## Exit Ticket

1. What is the difference between a risk and an issue?

2. Name one risk for a playground-building project.

3. What is one way to reduce that risk?

4. Circle one: I can create a backup plan. YES / ALMOST / NOT YET

## Teacher Check for Understanding

• Student identifies a realistic project risk.

• Student distinguishes a possible risk from an existing issue.

• Student can discuss likelihood and impact.

• Student proposes a reasonable prevention step or backup plan.

## Extension Activities

**STEM Extension:** Build a paper bridge and consider risks such as weak supports or limited materials. Plan one test and one backup design before construction.

**Home Connection:** Plan a family outdoor activity. Discuss what might change and one backup plan for weather or missing supplies.

**Teacher Tip:** Frame risk planning as preparation, not fear. Emphasize proportionate responses and the ability to adapt.

**Next Resource:** Communicating Project Progress.