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STEAM PROJECT PACK

Hands-on Engineering Projects for Creative, Innovative and Real-World Learning

- SUSTAINABLE CITY
- CAR CONSTRUCTION
- BRIDGE ENGINEERING
- WATER ROCKETS

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WELCOME

to the STEAM Project Pack

Welcome to the STEAM Project Pack – a collection of engaging, hands-on engineering projects designed to inspire creativity, curiosity and innovation.

These projects empower students to explore real-world challenges, apply scientific and mathematical concepts, and design practical solutions that make a difference.

Through collaboration, problem solving and design thinking, learners will build essential skills for the future while developing confidence and a passion for discovery.

IN THIS PACK, YOU WILL FIND:

SUSTAINABLE CITY
Design a smart, sustainable city that meets the needs of people today while protecting the planet for tomorrow.

CAR CONSTRUCTION
Build and test your own model car, exploring mechanics, materials and performance improvement.

BRIDGE ENGINEERING
Engineer a strong and efficient bridge using creative designs and real-world structural principles.

WATER ROCKETS
Design, build and launch water rockets while investigating pressure, thrust and flight dynamics.

OUR GOAL

To provide meaningful, hands-on learning experiences that connect theory with practice and prepare students to become innovative problem solvers and responsible global citizens.

Let's build, explore, innovate and create a better future together!

> The best way to predict the future is to create it.
>
> – Peter Drucker

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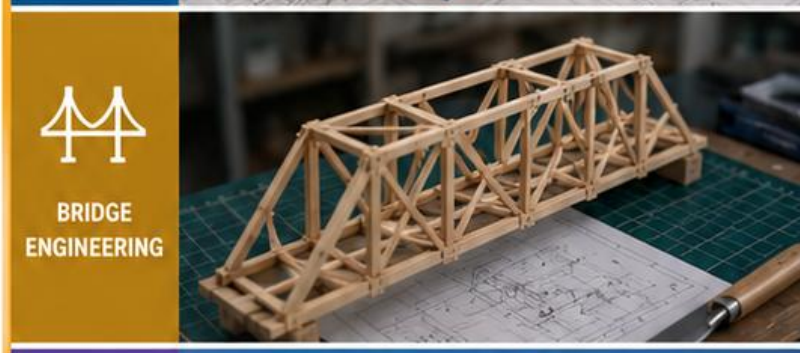
CONTENTS

STEAM PROJECT PACK



> The future belongs to those who design it, build it and improve it.
> *– Unknown*

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INTRODUCTION TO STEAM LEARNING

WHAT IS STEAM?

STEAM stands for Science, Technology, Engineering, Arts and Mathematics. It encourages students to combine creativity with analytical thinking to solve real-world problems.

WHY PROJECT-BASED LEARNING?

- Engages students in real-life challenges
- Develops critical thinking and problem solving
- Promotes teamwork and effective communication
- Encourages creativity, innovation and experimentation
- Connects learning to the real world

ENGINEERING DESIGN PROCESS

1. **ASK** – Identify the problem
2. **IMAGINE** – Brainstorm possible solutions
3. **PLAN** – Design and plan your idea
4. **CREATE** – Build your prototype
5. **TEST** – Try it out and collect data
6. **IMPROVE** – Reflect and make it better

IMAGINE
Think • Plan
Create • Improve

SKILLS DEVELOPED

- **Critical Thinking** – Analyse, evaluate and make decisions
- **Creativity & Innovation** – Generate original ideas and solutions
- **Collaboration** – Work effectively in teams
- **Communication** – Share ideas clearly and confidently
- **Science & Engineering** – Apply scientific and engineering principles
- **Math Skills** – Measure, calculate and analyse data

REAL-WORLD APPLICATIONS

Sustainable Development

Engineering Solutions

Structural Design

Aerospace & Technology

Innovation for the Future

> "The best way to predict the future is to create it."
> – *Peter Drucker*

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SUSTAINABLE CITY PROJECT

Design a smart, sustainable city that meets the needs of people today while protecting the planet for tomorrow.

SUSTAINABLE · COMMUNITY · INNOVATION · RENEWABLE · FUTURE-READY

PROJECT OVERVIEW

Students plan, design and create a sustainable city model using engineering, technology, science, mathematics and creativity. They will consider resources, energy, transport, buildings, waste management and quality of life.

KEY CHALLENGE

How can we design a city that is efficient, affordable, environmentally friendly and enjoyable for everyone? Students must balance people's needs, resources and the environment.

Sustainability is not just about technology – it's about smart choices for a better future.

PROJECT COMPONENTS

- **CITY PLANNING** – Land use, zoning and layout
- **ENERGY** – Renewable energy sources and efficiency
- **TRANSPORT** – Sustainable and efficient transport systems
- **BUILDINGS** – Green buildings and smart infrastructure
- **RESOURCES** – Water, waste and resource management
- **COMMUNITY** – Public spaces and quality of life
- **PRESENTATION** – Share and explain your city model

LEARNING CONNECTIONS

SCIENCE	Renewable energy, ecosystems, materials
TECHNOLOGY	Design tools, digital modelling, simulations
ENGINEERING	Structures, systems, problem solving
ARTS	Creative design, visual communication
MATHEMATICS	Measurement, scale, data, budgeting

SUCCESS CRITERIA

- ✓ Creative and functional city design
- ✓ Effective use of renewable resources
- ✓ Solutions that improve quality of life
- ✓ Strong teamwork and collaboration
- ✓ Clear presentation and communication

FINAL OUTCOMES

- 3D city model or digital model
- Project portfolio
- Presentation & pitch
- Reflection on learning

OUR ENGINEERING DESIGN PROCESS IN ACTION

1. **ASK** – Identify needs & challenges
2. **IMAGINE** – Brainstorm ideas
3. **PLAN** – Design & make a plan
4. **CREATE** – Build your city model
5. **TEST** – Evaluate your design
6. **IMPROVE** – Refine & make better

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CAR CONSTRUCTION PROJECT

Design, build and test your own model car to explore mechanics, materials and performance.
Engineered for speed, efficiency and innovation.

ENGINEERING | PERFORMANCE | MECHANICS | DESIGN | TESTING

PROJECT OVERVIEW

Students design and construct a working model car using Tinkercad (or similar CAD software) and physical materials. They test speed, stability and efficiency, and then improve their design.

KEY CHALLENGE

How can we design and build a model car that is fast, efficient, safe and reliable?
Students will apply engineering principles to solve real-world design challenges.

Great engineers don't just build things – they test, improve and innovate.

PROJECT COMPONENTS

- **CHASSIS** – Strong and lightweight structure
- **WHEELS & AXLES** – Smooth movement and alignment
- **DRIVETRAIN** – Gears, pulleys or rubber band motor
- **POWER SOURCE** – Elastic band / motor / wind
- **STEERING SYSTEM** – Direction and control
- **BODY DESIGN** – Aerodynamic shape (optional)
- **TESTING & ANALYSIS** – Speed, distance, stability
- **PRESENTATION** – Explain your design and results

LEARNING CONNECTIONS

SCIENCE	Forces, motion, friction, energy
TECHNOLOGY	CAD design, tools, materials
ENGINEERING	Design process, structures, mechanics
MATHEMATICS	Measurement, ratio, speed, data analysis
ARTS	Design aesthetics, branding, presentation

SUCCESS CRITERIA

- ✓ Innovative and creative design
- ✓ Strong and functional construction
- ✓ Efficient use of materials
- ✓ Excellent performance and testing
- ✓ Clear presentation and reflection

FINAL OUTCOMES

- Functional model car
- Performance testing results
- Design improvement
- Project portfolio
- Presentation & reflection

OUR ENGINEERING DESIGN PROCESS

1. **ASK** – Identify the problem and requirements
2. **IMAGINE** – Brainstorm and research ideas
3. **PLAN** – Design and plan your model
4. **CREATE** – Build your model car
5. **TEST** – Test and collect data
6. **IMPROVE** – Refine and make it better

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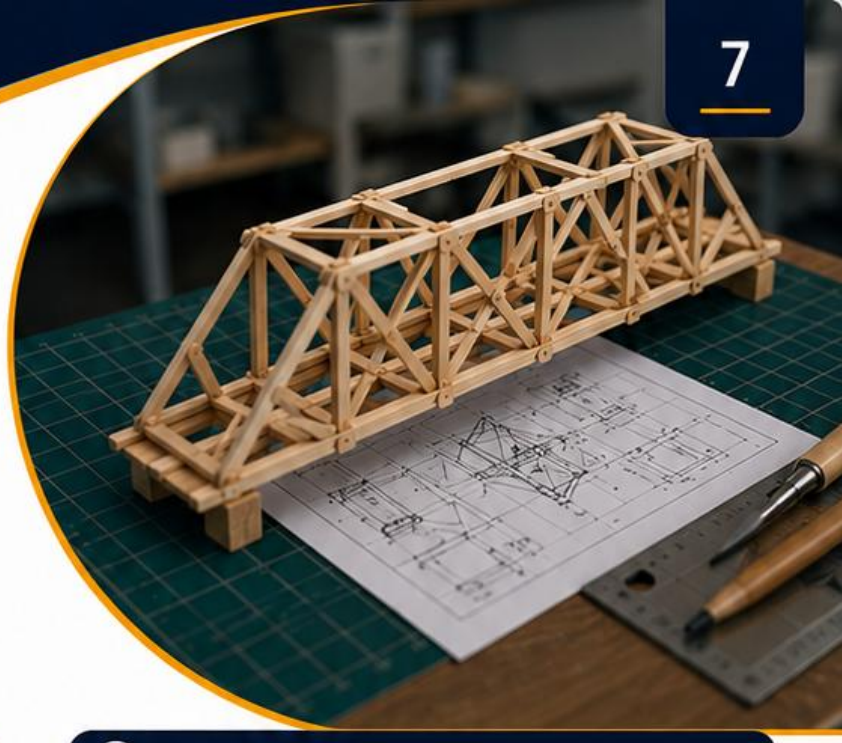
BRIDGE DESIGN PROJECT



Design and build a bridge that is strong, stable and able to support weight.
Engineer solutions. Test limits. Build strong connections.

STRUCTURES | STRENGTH | LOAD TESTING | DESIGN | TEAMWORK

PROJECT OVERVIEW

Students design and construct a model bridge using various materials. They test the bridge to determine how much load it can hold and analyze its performance. The project introduces key engineering concepts such as structures, forces and materials.

KEY CHALLENGE

How can we design a bridge that uses materials efficiently while holding the greatest possible load? Students must consider shape, materials, forces and stability in their design.

A good bridge design balances strength, stability, weight and smart use of materials.

PROJECT COMPONENTS

- **DESIGN** – Sketch and plan your bridge
- **MATERIALS** – Choose and justify materials
- **STRUCTURE** – Build a stable structure
- **LOAD TESTING** – Test and record results
- **DATA ANALYSIS** – Analyze performance
- **IMPROVEMENT** – Identify ways to improve
- **PRESENTATION** – Share your design and learning

LEARNING CONNECTIONS

SCIENCE	Forces, gravity, tension, compression
TECHNOLOGY	Tools, construction methods, innovation
ENGINEERING	Structures, materials, stability
MATHEMATICS	Measurement, ratio, data, graphs
ARTS	Design, creativity, visual communication

SUCCESS CRITERIA

- ✓ Creative and well-planned design
- ✓ Strong and stable bridge structure
- ✓ Efficient use of materials
- ✓ High load capacity
- ✓ Accurate data and analysis
- ✓ Clear presentation and reflection

FINAL OUTCOMES

- Working model bridge
- Load testing results
- Engineering portfolio
- Presentation & pitch
- Reflection on learning

OUR ENGINEERING DESIGN PROCESS IN ACTION

1. **ASK** – Identify the problem and needs
2. **IMAGINE** – Brainstorm and research ideas
3. **PLAN** – Design and plan your bridge
4. **CREATE** – Build your model
5. **TEST** – Test and collect data
6. **IMPROVE** – Refine and make it better

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WATER ROCKET PROJECT

Design, build and launch a water rocket to explore the principles of pressure, propulsion and aerodynamics. Aim high. Test. Improve. Launch again!

PRESSURE | PROPULSION | AERODYNAMICS | MEASUREMENT | TEAMWORK

PROJECT OVERVIEW

Students build a water rocket using simple materials and learn how water pressure and air pressure combine to create thrust. They test different variables, measure performance and work as a team to improve their rocket's flight.

KEY CHALLENGE

How can we design a water rocket that flies the highest, farthest or for the longest time?

Students must apply scientific principles, collect data and make improvements to achieve their goal.

Small changes in design and pressure can make a big difference in height, distance and stability!

PROJECT COMPONENTS

- **ROCKET BODY** – Plastic bottle
- **NOSE CONE** – Streamlined shape
- **FINS** – Stability and control
- **LAUNCH SYSTEM** – Pump and valve
- **PRESSURIZED WATER** – Creates thrust
- **PAYLOAD (OPTIONAL)** – Protect the payload
- **MEASUREMENT TOOLS** – Measure height, distance and time
- **SAFETY CHECKS** – Ensure safe launch and testing

LEARNING CONNECTIONS

SCIENCE	Forces, pressure, energy, motion, air resistance
TECHNOLOGY	Design tools, materials, testing equipment
ENGINEERING	Design process, problem solving, iteration
MATHEMATICS	Measurement, graphs, averages, ratios
ARTS	Design, decoration, branding
PHYSICAL EDUCATION	Team coordination, safety and outdoor skills

SUCCESS CRITERIA

- ✓ Safe and well-constructed rocket
- ✓ Successful launch
- ✓ Highest height / longest time / greatest distance
- ✓ Accurate data collection and analysis
- ✓ Effective teamwork and planning
- ✓ Clear presentation and reflection

FINAL OUTCOMES

- Working water rocket
- Launch testing results
- Data analysis and graphs
- Improved design
- Presentation & reflection

OUR ENGINEERING DESIGN PROCESS IN ACTION

1. **ASK** – Identify the problem and requirements
2. **IMAGINE** – Brainstorm ideas and research
3. **PLAN** – Design and plan your rocket
4. **CREATE** – Build your rocket
5. **TEST** – Launch and collect data
6. **IMPROVE** – Analyze and make it better

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ASSESSMENT RUBRICS

These rubrics are used to assess student learning across all STEAM projects.

Clear Criteria – Understand what is expected

Consistent – Fair and reliable assessment

Formative & Summative – Supports learning and achievement

Student Ownership – Encourages reflection and improvement

Real-World Skills – Assesses application, not just knowledge

PROJECT RUBRIC (All Projects)

CRITERIA	5 OUTSTANDING	4 VERY GOOD	3 SATISFACTORY	2 DEVELOPING	1 NEEDS IMPROVEMENT	WEIGHT (%)
DESIGN & PLANNING	Exceptional design with creative ideas. Clear plan with excellent detail.	Very good design with original ideas. Plan is clear and well structured.	Good design with some original ideas. Plan is mostly clear with some details.	Limited original ideas. Plan lacks some important details.	Design is unclear or lacks creativity. Plan is incomplete or missing.	20%
BUILD QUALITY & MATERIALS	Excellent construction using appropriate materials. Strong, durable and neat workmanship.	Very good construction. Materials used well with minor improvements.	Good construction with adequate materials. Some areas could be improved.	Weak construction. Limited use of materials or poor finishing.	Very weak construction. Materials used incorrectly or inadequately.	20%
TESTING & PERFORMANCE	Thorough testing with accurate data. Results show excellent performance.	Good testing with mostly accurate data. Results show good performance.	Testing completed with some data. Results show satisfactory performance.	Limited testing or incomplete data. Results show weak performance.	No testing or very little data. Results show poor performance.	20%
ANALYSIS & IMPROVEMENT	Excellent analysis of results. Identifies strengths and weaknesses with clear improvements.	Good analysis with some clear improvements suggested.	Basic analysis with some improvements identified.	Limited analysis. Few improvements identified.	No analysis or improvements suggested.	15%
PRESENTATION & COMMUNICATION	Outstanding presentation. Highly engaging, clear and very well organized.	Very good presentation. Clear, organized and engaging.	Good presentation. Mostly clear and organized.	Presentation lacks clarity or organization.	Poor presentation. Difficult to understand.	15%
TEAMWORK & COLLABORATION	Exceptional teamwork. All members fully participate and support each other.	Very good teamwork. Most members participate actively.	Good teamwork. Some members participate consistently.	Limited teamwork. Unequal participation.	Poor teamwork. Little to no collaboration.	10%
					TOTAL	100%

PERFORMANCE LEVEL DESCRIPTIONS

- **5 OUTSTANDING** – Exceeds all expectations. Exceptional work.
- **4 VERY GOOD** – Meets and exceeds most expectations.
- **3 SATISFACTORY** – Meets basic expectations.
- **2 DEVELOPING** – Approaching expectations. Needs improvement.
- **1 NEEDS IMPROVEMENT** – Does not meet expectations.

TEACHER NOTES

- Adjust weighting to match project priorities.
- Use this rubric for both formative feedback and final assessment.
- Encourage students to self-assess using the same rubric.
- Provide comments for each criterion to guide improvement.

PROJECT-SPECIFIC FOCUS

Sustainable City – Sustainability, resources, community impact
Car Construction – Mechanics, speed, efficiency, safety
Bridge Design – Strength, load capacity, stability
Water Rocket – Height, distance, pressure, data analysis

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10

Student Name: _____

Project Name: _____

Date: _____

Team / Class: _____

STUDENT REFLECTION

Take time to reflect on your learning journey. Think about what you did, what you learned and how you can improve.

REFLECTION FOCUS

- **What I did** — My actions and choices
- **What I learned** — New knowledge and skills
- **How I improved** — Growth and next steps
- **How we worked together** — Teamwork and collaboration

1 What was the goal of our project?

What were we trying to achieve?

2 What did I learn?

What new knowledge or skills did I gain?

3 What was challenging?

What difficulties did I face and how did I overcome them?

4 What went well?

What am I most proud of in my work or our team's work?

5 What could be improved?

What would I do differently next time?

6 What are my next steps?

What will I do with what I have learned?

PROJECT CHECKLIST

DESIGN & PLANNING

- ☐ I understood the problem
- ☐ I researched and planned
- ☐ I developed ideas

BUILD & CREATE

- ☐ I used materials effectively
- ☐ I built my model/prototype
- ☐ I followed the design process

TEST & EVALUATE

- ☐ I tested my design
- ☐ I collected and analysed data
- ☐ I evaluated the results

COMMUNICATE & PRESENT

- ☐ I prepared my presentation
- ☐ I explained my project clearly
- ☐ I answered questions well

TEAMWORK & COLLABORATION

- ☐ I listened to others
- ☐ I shared ideas and tasks
- ☐ I supported my team

Overall Effort: ☆ ☆ ☆ ☆ ☆

SKILLS I DEVELOPED

Problem Solving ☆ ☆ ☆ ☆ ☆	Critical Thinking ☆ ☆ ☆ ☆ ☆ ☆
Creativity ☆ ☆ ☆ ☆ ☆	Teamwork ☆ ☆ ☆ ☆ ☆ ☆
Engineering ☆ ☆ ☆ ☆ ☆	Time Management ☆ ☆ ☆ ☆ ☆ ☆
Communication ☆ ☆ ☆ ☆ ☆	Digital Literacy ☆ ☆ ☆ ☆ ☆ ☆

MY REFLECTION SUMMARY

Write a short paragraph summarising your learning journey in this project. What did you learn? What are you proud of? What will you take forward?

One sentence takeaway: _____

I AM PROUD OF...

What achievement or moment are you most proud of? _____

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TEACHER NOTES

Use this page to record observations, provide feedback and track progress across all STEAM projects.

Teacher Name: _____
Class / Group: _____
Academic Year: _____
Term: _____

PROJECTS OVERVIEW

1. Sustainable City	2. Car Construction	3. Bridge Design	4. Water Rocket
Date:	Date:	Date:	Date:

OVERALL PROGRESS (All Projects)

Strengths:

Areas for Growth:

OBSERVATIONS

FOCUS AREA	PROJECTS 1	2	3	4	NOTES / EXAMPLES
IDEA & CREATIVITY					
PLANNING & DESIGN PROCESS					
MAKING & CONSTRUCTION					
TESTING & ANALYSIS					
PROBLEM SOLVING & CRITICAL THINKING					
TEAMWORK & COLLABORATION					
COMMUNICATION & PRESENTATION					
SAFETY & RESPONSIBILITY					

P = Proficient (Consistent) D = Developing (Sometimes) B = Beginning (Rarely)

FEEDBACK & NEXT STEPS

WHAT WENT WELL
- _____
- _____
- _____

AREAS TO IMPROVE
- _____
- _____
- _____

NEXT STEPS / ACTION PLAN
- _____
- _____
- _____

STUDENT SUPPORT / INTERVENTIONS

STUDENT / GROUP	SUPPORT / INTERVENTION

INDIVIDUAL STUDENT NOTES

STUDENT NAME	STRENGTHS	AREAS TO IMPROVE	COMMENTS

ASSESSMENT SUMMARY

SROJECT	CLASS AVERAGE (/30)	ENGAGEMENT (1–5)	OVERALL COMMENT
1. Sustainable City			
2. Car Construction			
3. Bridge Design			
4. Water Rocket			

OVERALL COMMENTS:

GENERAL COMMENTS & REFLECTION

What worked well across the projects?
- _____
- _____
- _____

What would you do differently next time?
- _____
- _____
- _____

Additional notes / ideas for future projects:
- _____
- _____
- _____

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12

MATERIALS & EQUIPMENT

Having the right materials, a safe environment and an organised classroom setup helps students learn, create and innovate successfully. This page outlines recommended resources, safety guidelines and classroom organisation tips for all STEAM projects.

RECOMMENDED RESOURCES

Design & Planning
- Sketchbooks / Engineering notebooks
- Pencils, erasers, rulers, graph paper
- Markers, colour pencils
- Planning templates & design sheets

Building Materials
- Cardboard, foam board, corrugated board
- Wooden sticks, dowels, balsa wood
- Plastic sheets, straws, bottle caps
- Tape (masking, duct), glue, scissors, craft knives
- Nuts, bolts, screws, washers

Tools & Equipment
- Hot glue guns (teacher use)
- Hand saws, cutters, pliers
- Screwdrivers, spanners
- Drills (teacher use)
- Cutting mats

Testing & Measurement
- Rulers, measuring tapes, vernier calipers
- Digital scales, spring balances
- Stopwatches, timers
- Protractors, angle finders

Technology & Digital Tools
- Computers / Laptops / Tablets
- Tinkercad (3D design)
- Data collection apps / spreadsheets
- Projector / Interactive whiteboard

Special Project Items
- Water rocket kit (bottle, fins, nose cone)
- Bike pumps / air pumps, launch stand
- Safety goggles, gloves

Materials can be adapted based on availability. Encourage students to use recycled and sustainable materials whenever possible.

SAFETY FIRST

A safe environment is essential for creativity and learning.

- Always wear safety goggles when using tools, cutters or during testing.
- Use tools and equipment only as instructed by the teacher.
- Report any damaged tools or unsafe conditions immediately.
- Keep hands and work areas clean. Wash hands after handling materials.
- No eating or drinking in the workshop or classroom.
- Follow all safety rules during testing (e.g., water rocket launches, load tests).
- Know the location of the fire extinguisher, first aid kit and emergency exit.

PPE (Personal Protective Equipment)

- Safety Goggles
- Protective Gloves
- Apron / Lab Coat (when needed)
- Closed-Toe Shoes

Quick Safety Checklist

- Work area is clean and organised
- Tools are in good condition
- Safety signs are visible
- Students are wearing appropriate PPE
- Emergency equipment is accessible
- Students understand safety rules

CLASSROOM SETUP

An organised classroom encourages focus, teamwork and efficient use of time.

Tool & Material Storage
Label boxes and shelves. Keep tools sorted and secure.

Display & Inspiration
Display project examples, rubrics, and engineering posters.

Testing Area
Designate a clear, safe space for testing and launching.

Clean-Up Station
Provide bins and cleaning supplies. Build responsibility in students.

Work Zones
Create different zones: Design, Build, Test, and Storage.

Group Tables
Arrange tables for group collaboration (teams of 2–4).

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AI SUPPORT FOR STEAM

Artificial Intelligence can be a powerful partner in learning. It can help you generate ideas, research, solve problems, and improve your designs. Use AI responsibly, ethically and creatively to enhance your STEAM journey.

EXAMPLE AI PROMPTS

Use these prompt ideas to get helpful responses from AI tools like ChatGPT, Copilot, or Gemini.

Research & Information
"Explain how pneumatic systems work in water rockets."
"What are some sustainable materials for building a model city?"

Brainstorming Ideas
"Give me 10 creative ideas for a sustainable city."
"Suggest alternative designs for a strong bridge using limited materials."

Design & Prototyping
"Help me improve my car design for less friction and better speed."
"What changes can I make to make my bridge hold more weight?"

Data & Analysis
"How do I calculate the average speed of my car from this data?"
"Make a table and graph of these test results."

Reflection & Feedback
"What went well in my project and what could be improved?"
"Give me feedback on my STEAM presentation."

Always check facts, think critically and give credit when you use AI support.

REFLECTION PROMPTS (WITH AI SUPPORT)

Use AI to help you reflect deeper on your learning and growth throughout the project.

- What did I learn from this project?
- What challenges did I face and how did I overcome them?
- How did my design evolve from start to finish?
- What skills did I improve and how?
- What would I do differently next time?
- How can my project make a positive impact?

Ask AI: "Help me reflect on my project and suggest questions I should ask myself."

BRAINSTORMING IDEAS WITH AI

AI can help you generate many ideas quickly. Use it to explore different possibilities before deciding on the best solution.

- Ask AI for as many ideas as possible.
- Combine the best parts of different ideas.
- Evaluate each idea for feasibility and impact.
- Think about sustainability, cost and user needs.

Try This:
Ask AI: "Give me 5 innovative ideas for a water-saving feature in a sustainable city."

PROTOTYPE IMPROVEMENT WITH AI

Use AI to analyse your design and suggest improvements. It can help identify weaknesses and offer better solutions.

- Upload or describe your design.
- Ask AI for feedback on strength, function and efficiency.
- Explore alternative materials or mechanisms.
- Iterate and refine your prototype.

Try This:
Ask AI: "How can I improve the stability of my bridge using only popsicle sticks and glue?"

RESPONSIBLE AI USE

Be Ethical	Use AI to support your own thinking, not to replace it.
Be Accurate	Check information for accuracy and reliability.
Be Transparent	Acknowledge when and how you used AI in your work.
Be Respectful	Respect data privacy and others' ideas.
Be Balanced	Use AI as a tool — your creativity, effort and decisions matter most.

AI is a Tool, Not a Shortcut

Use it wisely.
Learn deeply.
Innovate boldly.
Make a difference.

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EXTENSION CHALLENGES

Challenge yourself to go further, think deeper and create impact! These ideas help you take your STEAM projects to the next level.

DIFFERENTIATION FOR ALL LEARNERS

Support Learners
- Provide step-by-step guides and templates
- Use visual aids and example models
- Offer sentence starters for reflections
- Work in pairs or small groups

Core Learners
- Follow project requirements fully
- Use the rubric to guide their work
- Ask questions and seek feedback

Stretch Learners
- Take on extension challenges
- Add extra features and real-world impact
- Mentor peers and share expertise
- Explore advanced tools and AI

Every learner can succeed with the right challenge and support!

CHALLENGES FOR GIFTED & ADVANCED LEARNERS

- Redesign the project with fewer materials.
- Add a smart/automated feature (using sensors, circuits or code).
- Make the project more sustainable.
- Improve performance and efficiency.
- Analyse data and justify your design.
- Create a detailed 3D model and animation.
- Present your solution to a real audience or competition.

Think bigger • Go deeper • Make an impact!

HOME EXTENSION IDEAS

- Research online and find real-world solutions.
- Interview family members or experts.
- Build a prototype at home.
- Use AI tools to refine ideas and presentations.
- Create a digital poster or video presentation.

Learning doesn't stop in the classroom! Keep exploring at home.

CROSS-CURRICULAR CONNECTIONS

Maths	• Measurements, calculations, graphs, ratios • Data analysis and statistics
Science	• Forces, energy, materials, ecosystems • Experiments and testing
ICT / CS	• 3D modelling, coding, simulations • Data handling and AI tools
Art & Design	• Sketching, prototyping, visual communication • Branding and creative design
English	• Reports, reflections, presentations • Persuasive writing and storytelling
Geography	• Sustainable cities, climate change, maps • Community and global impact
Business / Economics	• Costing, budgeting, marketing • Entrepreneurial thinking

STEAM EXTENSION CHALLENGE IDEAS

Sustainable City
How can you make your city 100% renewable?

Car Construction
Can you build a car that uses alternative energy?

Bridge Design
Can your bridge hold 2x more weight?

Water Rocket
Can you reach 100 meters high?

Innovation
What real-world problem will you solve?

Impact
How will your project help your community?

Your ideas today can change the world tomorrow!

TEAMWORK & COLLABORATION | CRITICAL THINKING & PROBLEM SOLVING | ENGINEERING DESIGN PROCESS | CREATIVITY & INNOVATION | REAL-WORLD APPLICATIONS

LEARN • INNOVATE • BUILD • INSPIRE

NTES
NT Education Solutions

> “Education is the most powerful weapon which you can use to change the world.”
>
> – Nelson Mandela

CONTACT

LET’S BUILD THE FUTURE TOGETHER

We value communication, collaboration and continuous improvement. If you have any questions, suggestions or would like to share ideas, we’d love to hear from you.

TEACHER
Mr. Noureddine Tadjerout
Head of Computer Science & STEAM

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+44 7493657466

EMAIL
info@nteducationsolutions.com

WEBSITE
https://www.nteducationsolutions.com

LOCATION
London, United Kingdom

SCAN ME!

CONNECT INSTANTLY

Scan the QR code to save my contact details and connect directly.

TOGETHER, WE CAN INSPIRE INNOVATION

Let’s continue to learn, create and make an impact through the power of STEAM!

Reach out anytime.
I’m here to support you and your learning journey!

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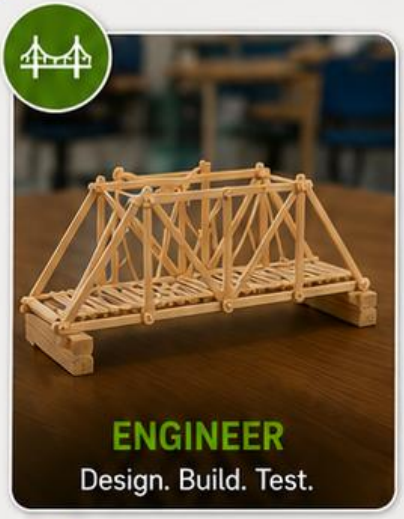
NTES
NT Education Solutions

EMPOWERING YOUNG MINDS. BUILDING A BETTER FUTURE.

Through STEAM education, hands-on projects and real-world challenges, we inspire students to think critically, innovate confidently and create solutions that make a difference.

Learn. Innovate. Build. Inspire.
Together, we can shape a better tomorrow.



THINK CRITICALLY
Ask questions. Find solutions.

WORK TOGETHER
Great ideas come from teamwork.

SOLVE REAL PROBLEMS
Use knowledge to make an impact.

BE CURIOUS
Explore, learn and never stop.

DREAM BIG
Your ideas today shape tomorrow.

> The future belongs to the curious, the creators and the courageous. Keep learning. Keep building. Keep inspiring.

YOU HAVE THE POWER
to design, build and inspire a better world.

KEEP CREATING.
KEEP INNOVATING.
KEEP MAKING A DIFFERENCE.

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Scan to connect!

LEARN • INNOVATE • BUILD • INSPIRE

Thank you for being part of this exciting STEAM journey!