

Stick 'Em Pakistan Curriculum Mapping

National Curriculum of Pakistan (NCP/SNC)

Language: English · Total Lessons: 111 · Date: 2026-09-22



Mapped against official curriculum documents (National Curriculum of Pakistan (NCP/SNC), last verified 2026). Treat as a starting point — verify with your own framework lead before using for formal assessment.

Generated 22 September 2026. Each of 111 Stick'Em lessons was scored 0–100 against the descriptor pool of 5 Pakistan curriculum frameworks and matched to its best-fit curriculum and grade level.

Breakdown: 87 direct fits (78%, strong green sidebar) · 12 indirect (11%, lighter green) · 12 with no credible alignment (11%, shown without a sidebar).

87 of 111 lessons are direct fits — 78%

12 indirect fits (11%) — useful bridges, verify with your school's framework lead · 12 lessons (11%) have no credible curriculum alignment

Frameworks mapped against: National Curriculum of Pakistan (NCP/SNC), last verified 2026.

COVERAGE BREAKDOWN

Lessons	Framework	Grade band
2	National Curriculum of Pakistan (NCP/SNC) — AI & Robotics	Grade 3
2	National Curriculum of Pakistan (NCP/SNC) — Mathematics	Grade 3
4	National Curriculum of Pakistan (NCP/SNC) — AI & Robotics	Grade 4
1	National Curriculum of Pakistan (NCP/SNC) — General Science	Grade 4
5	National Curriculum of Pakistan (NCP/SNC) — Mathematics	Grade 4
1	National Curriculum of Pakistan (NCP/SNC) — AI & Robotics	Grade 5
1	National Curriculum of Pakistan (NCP/SNC) — Art	Grade 5
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1	National Curriculum of Pakistan (NCP/SNC) — Art	Grade 6
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4	National Curriculum of Pakistan (NCP/SNC) — Art	Grade 7
24	National Curriculum of Pakistan (NCP/SNC) — General Science	Grade 7
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11	National Curriculum of Pakistan (NCP/SNC) — AI & Robotics	Grade 9
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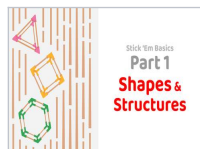
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1 Shapes & Structures

Stick 'Em Basics



Teamwork

Geometry

Structures

Students dive into the exciting challenge of constructing the tallest tower using limited materials, mirroring real-world engineering constraints. They collaborate in teams to design and build their structures using an array of colorful chopsticks and connectors, which they strategically select to create both 2D and 3D shapes. Through iterations of their designs, they test their towers for stability and height, showcasing their engineering skills while adapting to the challenges they face. The result is not only a remarkable structure that captures the essence of creative problem-solving, but also visual evidence of learning as students document their impressive towers and share feedback!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

public + private + madrassah · verified 2026

Grade 3

DESCRIPTORS

- [Mathematics — Geometry] Recognise, name and classify 2D shapes and 3D objects while building a tower structure.

2 Introduction to Connectors

Stick 'Em Basics



Teamwork

Geometry

Learn how different connectors work, and how they interact with each other. The activity is to copy a helicopter, understanding perspective, and different types of connectors available

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

public + private + madrassah · verified 2026

Grade 3

DESCRIPTORS

- [Mathematics — Geometry] Spatial reasoning and perspective through assembling and comparing connector shapes.

3 Build a Basic Robot

Stick 'Em Basics



Motion Control

Students build a basic robot, combining their understanding of the simple electronics, connectors, and chopsticks.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 3

DESCRIPTORS

- [AI & Robotics — Introduction to AI & Robotics] Build and control a simple robot combining electronics, connectors and structure.

4 Robot Mechanisms

Stick 'Em Basics



Creativity

Design Thinking

Students learn about the different ways to use mechanisms on their robots, active and passive, and get building references.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 4

DESCRIPTORS

- [AI & Robotics — Introduction to AI & Robotics] Distinguish active and passive mechanisms and apply them to a robot build.

5 Electronics & Control App

Stick 'Em Basics



Motion Control

1. Identify components of the electronics board and their functions. 2. Connect servo motors correctly to the electronics board. 3. Power up the electronics board and troubleshoot connection issues. 4. Use the control app to manipulate servo motors and explore control modes.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 3

DESCRIPTORS

- [AI & Robotics — ICT Fundamentals] Identify basic ICT/electronics components and their functions, and operate a control app safely.

6 Block Coding

Stick 'Em Basics



Computing

Motion Control

1. Learn the basics of automation and its applications. 2. Build programming skills using drag and drop coding blocks. 3. Evaluate robot movement through the use of timing and speed adjustments.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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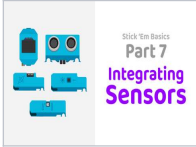
Grade 4

DESCRIPTORS

- [AI & Robotics — Problem Solving and Programming Fundamentals] Build programs with block-based coding to automate a robot's actions.

7 Integrating Sensors

Stick 'Em Sensors



1. Identify different types of sensors and their functions. 2. Connect and wire various sensors to the electronics board. 3. Read and interpret sensor data using the sensor monitor. 4. Program responses based on sensor inputs. 5. Design and prototype a project using sensors.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 4

DESCRIPTORS

- [AI & Robotics — Introduction to AI & Robotics] Identify sensor types and wire them into an electronics board to give a robot input.

8 Build a Catapult

Stick 'Em Mechanisms



Elastic Energy

Building a Catapult In this lesson, students will: 1. Build a functional catapult using specified materials. 2. Experiment with varying shooting angles to optimize performance. 3. Evaluate the effectiveness of different angles in hitting targets.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Build a catapult and experiment with elastic energy and launch angle.

9 Build a Winch (Crane)

Stick 'Em Mechanisms



Motion Control

Design Thinking

Building a Winch (Crane) In this lesson, students will: 1. Build a winch and pulley mechanism using various materials. 2. Test the movement and functionality of their winch. 3. Analyze and troubleshoot any friction or movement issues in the mechanism. 4. Create unique hook attachments for their winch. 5. Connect their winch to a control board for operation.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Build a winch-and-pulley mechanism and test its lifting function.

10 Build a Crank & Slider

Stick 'Em Mechanisms



Motion Control

Energy Conversion

1. Build a Slider and Crank mechanism using provided materials 2. Prepare the base and slider mechanisms by cutting materials to specified lengths 3. Connect and power the completed Slider and Crank mechanism using a control board and servo motor

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Build a slider-and-crank mechanism to investigate motion conversion.

11 Build a Belt & Pulley

Stick 'Em Mechanisms



Motion Control

Energy Conversion

Building a Belt & Pulley In this lesson, students will: 1. Build a belt and pulley mechanism using provided materials. 2. Assemble components including pulleys, axles, and clips to create a functional device. 3. Connect and power the mechanism using a control board and power bank.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Build a belt-and-pulley system and investigate mechanical energy transfer.

12 (Improved) Build a Crank & Slider

Stick 'Em Mechanisms



Design Thinking

Motion Control

Stick 'Em Academy Level 1 In this lesson, students will: 1. Build a Slider and Crank using specified materials. 2. Prepare the frame and mechanisms for the Slider and Crank assembly. 3. Secure the servo and connect electrical components for operation.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Build and test a crank-and-slider mechanism that converts rotary to linear motion.

13 Investigate Elastic Potential Energy (Skyshot Catapults)

[Level 1 \(Learn\)](#)



Elastic Energy

Design Thinking

Investigating Elastic Potential Energy using Catapults In this lesson, students will: 1. Learn about elastic potential energy (EPE) 2. Learn why EPE is important in real-world applications 3. Build a rubber band catapult 4. Test the effects of elastic energy on catapult performance 5. Reflect on the design of their catapults

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 4

DESCRIPTORS

- [General Science — Physical Science] Investigate forces and energy stored in stretched or compressed materials.

14 Investigate Geometry (Geometry Scavenger Hunt)

[Level 1 \(Learn\)](#)



Geometry

Creativity

Investigating Geometry (Geometry Scavenger Hunt) In this lesson, students will: 1. Learn about what a shape is 2. Search for shapes around our classroom 3. Build some shapes that we find 4. Check out our friend's shapes 5. Reflect on what we learned about shapes

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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Grade 4

DESCRIPTORS

- [Mathematics — Geometry] Identify and classify 2D and 3D shapes found in the everyday environment.

15 Investigate Angles (Skyshot Catapult)

[Level 1 \(Learn\)](#)



Geometry

Design Thinking

Critical Thinking

Stick 'Em Academy Level 1 In this lesson, students will: 1. Learn about what angles are and their different types. 2. Learn how we use angles in daily life. 3. Build an adjustable angle catapult. 4. Experiment with different launch angles. 5. Analyze the results of different launch angles.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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Grade 4

DESCRIPTORS

- [Mathematics — Geometry] Identify, measure and use angles while building and testing a catapult.

16 Explore Tessellations

Level 1 (Learn)



Geometry Creativity

Exploring Tessellations In this lesson, students will: 1. Learn about tessellations and their characteristics. 2. Learn about uses of tessellations in daily life. 3. Create their own tessellation. 4. Analyze and provide feedback on classmates' tessellations. 5. Reflect on their understanding of tessellations.

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — Mathematics
public + private + madrassah · verified 2026
Grade 4
DESCRIPTORS
● [Mathematics — Geometry] Recognise and classify repeating 2D shape patterns and their real-world uses.

17 Investigate an Abacus (Arithmetic Add-Venture)

Level 1 (Learn)



Arithmetics Problem Solving

Investigating an Abacus In this lesson, students will: 1. Learn about the history and usage of the abacus. 2. Analyze the structure and components of an abacus. 3. Build their own abacus using provided materials. 4. Evaluate arithmetic problems using their constructed abacus. 5. Collaborate in groups to solve arithmetic challenges effectively.

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — Mathematics
public + private + madrassah · verified 2026
Grade 4
DESCRIPTORS
● [Mathematics — Numbers and Operations] Explore place value and computation using a traditional calculating tool.

18 Explore the 4 Basic Operations

Level 1 (Learn)



Arithmetics Problem Solving

1. Identify the four basic operations: addition, subtraction, multiplication, and division. 2. Analyze how to use the order of operations in calculations. 3. Evaluate practical applications of the four operations in everyday scenarios. 4. Construct a robot using basic materials to reinforce understanding of operations through a scoring challenge.

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — Mathematics
public + private + madrassah · verified 2026
Grade 4
DESCRIPTORS
● [Mathematics — Numbers and Operations] Identify and apply addition, subtraction, multiplication and division in real-life problems.

19 Investigate Biomimicry (Camouflage)

Level 2 (Explore)



- Biology
- Creativity
- Design Thinking
- Art & Design

Investigating Biomimicry (Camouflage) In this lesson, students will: 1. Analyze the concept of biomimicry and its importance. 2. Investigate different types of camouflage used by various animals. 3. Create a camouflaged robot using principles learned from nature.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 5

DESCRIPTORS

- [General Science — Life Science] Investigate camouflage as an adaptation and apply the concept to a design.

20 Investigate Mass

Level 2 (Explore)



- Mass
- Creativity
- Teamwork

Investigating Mass In this lesson, students will: 1. Investigate the concept of mass and its measurement. 2. Compare the mass of different objects and understand the distinction between mass and weight. 3. Design and build a machine to accurately measure mass. 4. Apply problem-solving skills to determine the mass of an object using their machine.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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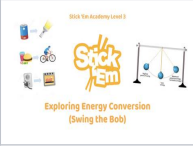
Grade 5

DESCRIPTORS

- [Mathematics — Measurement] Measure and compare the mass of different objects using standard units.

21 Explore Oscillating Pendulums

Level 2 (Explore)



- Energy Conversion
- Problem Solving

1. Explore the concepts of potential and kinetic energy. 2. Analyze energy conversion through various examples. 3. Build and experiment with pendulums to observe oscillation behavior. 4. Evaluate the factors affecting the number of oscillations of a pendulum.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 5

DESCRIPTORS

- [General Science — Physical Science] Analyse the conversion between potential and kinetic energy in a swinging pendulum.

22 Explore Drawing Robots & Art

Level 2 (Explore)



Motion Control Creativity Art & Design

Exploring Drawing Robots & Art In this lesson, students will: 1. Investigate the functionalities of different drawing robots 2. Build a drawing robot that can perform specific tasks 3. Create artistic drawings using their constructed robots

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 6

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Build and evaluate a robot that produces creative drawn output.

23 Investigate Biomimicry (Animal Features)

Level 2 (Explore)



Biology Creativity Teamwork

Investigating Biomimicry (Animal Features) In this lesson, students will: 1. Explore the concept of biomimicry and its applications in solving real-world problems. 2. Identify and analyze unique animal features and their functions. 3. Create a robotic model that replicates an animal's unique feature both visually and functionally.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 5

DESCRIPTORS

- [General Science — Life Science] Explore how animal adaptations inspire engineering solutions.

24 Explore Algebra with Mass

Level 2 (Explore)



Simultaneous Equations Critical Thinking Algebra

Critical, Adaptive & Inventive Thinking

Exploring Algebra (Mass) In this lesson, students will: 1. Learn to formulate simultaneous equations to solve for unknown masses. 2. Build equations using given masses and connector types to find solutions. 3. Evaluate different methods (elimination and substitution) for solving simultaneous equations. 4. Create a machine design to accurately determine the mass of specified connectors.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

public + private + madrassah · verified 2026

Grade 8

DESCRIPTORS

- [Mathematics — Algebra] Formulate and solve simultaneous equations to find unknown masses.

25 Explore Bridges (Tension & Compression)

Level 3 (Apply)



Structures

Problem Solving

Design Thinking

Exploring Bridges (Tension & Compression) In this lesson, students will: 1. Learn about the importance of bridges and their functions. 2. Analyze the concepts of tension and compression in bridge design. 3. Evaluate different types of bridges and how they utilize tension and compression. 4. Create a bridge design that incorporates the concepts of tension and compression while aiming for a flat structure.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Analyse tension and compression forces in bridge structures.

26 Investigate Senses (Silent Alarm)

Level 3 (Apply)



Motion Control

Creativity

Problem Solving

Investigating Senses (Silent Alarm) In this lesson, students will: 1. Create a simple alarm clock that utilizes the sense of touch. 2. Analyze the importance and function of the five senses. 3. Design a silent alarm clock that employs various senses excluding hearing.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Build a sensor-based device that detects touch and triggers a response.

27 Explore Magnetism (Fishing with Magnets)

Level 3 (Apply)



Magnetism

Design Thinking

Teamwork

Exploring Magnetism with Magnetic Fishing Rods In this lesson, students will: 1. Explore the properties of magnets and their magnetic fields. 2. Create and build a fishing mechanism using magnets. 3. Investigate different magnet configurations for optimal results.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Explore magnetic fields and properties through a built fishing game.

28 Design Stray Shelters

Level 3 (Apply)



Structures

Design Thinking

Designing Stray Shelters In this lesson, students will: 1. Brainstorm features needed in a house for stray puppies. 2. Design a puppy house with specific features for stray puppies. 3. Create a showcase presentation that includes photos and a video of the designed puppy house.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Apply structural design principles to build a shelter meeting specific needs.

29 Explore the Great Wall

Level 3 (Apply)



Structures

Creativity

Exploring the Great Wall In this lesson, students will: 1. Analyze the historical significance of the Great Wall of China. 2. Build a model of the Great Wall using the Stick 'Em Robotics Kit. 3. Create a narrative that explains the purpose and design of their Great Wall model.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [Art — Cultural Art & Craft] Explore historical significance through building a scale model.

30 Explore Earthquakes

Level 3 (Apply)



Structures

Problem Solving

Exploring Earthquakes In this lesson, students will: 1. Learn how earthquakes occur and their impacts on the environment. 2. Analyze structural designs that can withstand seismic activity. 3. Build an earthquake-resistant tower using various materials and techniques. 4. Evaluate the effectiveness of their designs through practical testing on an earthquake simulation machine.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Earth and Space Science] Investigate how earthquakes occur and how structures can resist them.

31 Learn about Sustainable Farming

Level 4 (Innovate)



Sustainability

Problem Solving

Learning about Sustainable Farming In this lesson, students will: 1. Analyze the sustainability of current farming methods 2. Evaluate the environmental, social, and economic impacts of unsustainable farming 3. Create solutions for sustainable farming challenges using robotics

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 9

DESCRIPTORS

- [General Science — Earth & Space Sciences] Analyse the sustainability of farming methods and their environmental impact.

32 Learn about Assistive Technology

Level 4 (Innovate)



Motion Control

Critical Thinking

Design Thinking

Critical, Adaptive & Inventive Thinking

Learning about Assistive Technology In this lesson, students will: 1. Understand the importance of assistive technology for individuals with disabilities. 2. Analyze specific needs of users requiring assistive devices. 3. Create a design for an assistive device addressing a specific challenge.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 9

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Understand and design assistive technology for individuals with disabilities.

33 Design for Disaster Relief

Level 4 (Innovate)



Critical Thinking

Design Thinking

Art & Design

Creativity

Designing for Disaster Relief In this lesson, students will: 1. Analyze various natural disasters and their impacts on communities. 2. Create innovative problem statements and corresponding robotic solutions for disaster relief. 3. Evaluate the effectiveness of different disaster response strategies. 4. Build a prototype of their proposed solution using recycled materials. 5. Present their designs and reflect on their learning experiences.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Computer Science

public + private + madrassah · verified 2026

Grade 10

DESCRIPTORS

- [Computer Science — Entrepreneurship in the Digital Age] Apply design thinking to create a solution for a real disaster-relief problem.

34 Learn how Recycling Works!

Level 4 (Innovate)



Recycling Creativity Problem Solving

Teamwork

Learning how Recycling Works! In this lesson, students will: 1. Learn the steps involved in the recycling process. 2. Analyze the importance of recycling for energy conservation and resource management. 3. Create a sorting machine to simulate the recycling process. 4. Evaluate the effectiveness of different recycling systems through challenges.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 9

DESCRIPTORS

- [General Science — Earth & Space Sciences] Analyse the recycling process and its importance for the environment.

35 Improve Recycling in Singapore

Level 4 (Innovate)



Recycling Creativity Design Thinking

1. Analyze various recycling systems implemented in Singapore and other countries. 2. Create a recyclables collection system tailored for their school environment. 3. Present their proposed solution to the class and teachers.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 9

DESCRIPTORS

- [General Science — Earth & Space Sciences] Analyse recycling systems and design an improved recycling solution.

36 Learn about Cultural Symbols in Singapore

Level 4 (Innovate)



Creativity Design Thinking Teamwork

1. Explore and identify various cultural symbols significant to Singaporean heritage. 2. Create their own artistic representation of a chosen cultural symbol using mixed media. 3. Present their artwork and explain the meaning and importance of the cultural symbol to the class.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

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Grade 9

DESCRIPTORS

- [Art — Cultural Art & Craft] Explore cultural symbols and heritage through a making project.

37 Superhero Fashion Show

Activity/Challenge Only



Creativity Design Thinking Art & Design

1. Build a wearable gadget inspired by superheroes. 2. Analyze the movement and functionality of their designs. 3. Create visual documentation of their superhero gadgets.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 6

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Build and analyse the movement and functionality of a wearable device.

38 Water Dispatch Challenge

Activity/Challenge Only



Critical Thinking Creativity Problem Solving

Design Thinking Critical, Adaptive & Inventive Thinking

1. Create robots that can collect and deliver water cubes to different villages. 2. Evaluate robot mechanisms for optimal performance in the competition. 3. Analyze strategies for maximizing scoring based on village elevations.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 7

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Build and evaluate a robot mechanism that transports resources.

39 Prototype with Stick 'Em

Stick 'Em Makers



Critical Thinking

1. Design and create a functional prototype using various materials and tools. 2. Collaborate in teams to brainstorm solutions and develop their prototype ideas. 3. Test and iterate on their prototypes, gathering feedback and making improvements.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 6

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Design and build a functional prototype using available materials and tools.

40 Design Battlebots

Level 4 (Innovate)



Creativity

Design Thinking

Teamwork

Motion Control

Designing Battlebots In this lesson, students will: 1. Explore the principles of building robots that can engage in combat. 2. Design and construct their own battlebots using Stick 'Em kits. 3. Evaluate the effectiveness of different battlebot mechanisms and strategies.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 9

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Design and build a competition robot, evaluating mechanisms for durability and control.

41 Stick 'Em Academy Tutorial

Teacher Resources



1. Explore the key components of the Stick 'Em Academy program and its applications in STEM education. 2. Identify effective strategies for integrating hands-on activities into their teaching practices. 3. Develop a personalized lesson plan that incorporates maker principles and engages students in STEM learning.

42 Build a Computer Vision Model

Stick 'Em AI



1. Explore the basics of computer vision and how it is used in real-world applications. 2. Design and code a simple computer vision model using a programming platform. 3. Test and refine their model to improve accuracy and performance.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Explore how a computer vision model recognises patterns in real-world images.

43 Build an AI Pose-Control Humanoid Robot

Stick 'Em AI



Build an AI pose-controlled humanoid robot that follows your hand and head movements to do all sorts of crazy robot dances

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Build a robot controlled through pose recognition and sensor input.

44 Build a Gravity Powered Car (GPE to KE)

Level 2 (Explore)



1. Build a gravity-powered car using specific mechanisms 2. Evaluate the function of different components in the car 3. Analyze the conversion of gravitational potential energy to kinetic energy

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 5

DESCRIPTORS

- [General Science — Physical Science] Investigate the conversion of gravitational potential energy into kinetic energy.

45 Makerspace & Recess Activities

Teacher Resources



Students embark on an exciting journey to tackle real-world engineering challenges, including the Tallest Tower Challenge, Strongest Bridge Challenge, and innovative robotics activities. In these hands-on sessions, they design and build structures using limited materials, test their durability, and engineer robots capable of navigating obstacles. Collaborating in teams, students iterate on their designs to enhance functionality, ensuring every creation meets the challenge criteria. Each group demonstrates their learning through the construction of gravity-defying towers or weight-bearing bridges, showcasing their innovative robots in a competitive environment. This engaging experience not only fosters creativity and critical thinking but also cultivates teamwork and problem-solving skills!

46 Explore Wind Energy (Sail Cars)

[Level 2 \(Explore\)](#)



Wind Energy

Energy Conversion

Teamwork

Exploring Wind Energy (Sail Cars) In this lesson, students will: 1. Learn about how wind is generated 2. Learn why wind is important to us 3. Learn the uses of wind energy 4. Build a wind-powered car 5. Test our wind-powered cars 6. Reflect on our prototypes

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 5

DESCRIPTORS

- [General Science — Physical Science]
Investigate how wind is generated and used as a renewable energy source.

47 Explore Elastic Potential Energy (Mousetrap Car)

[Level 2 \(Explore\)](#)



Elastic Energy

Energy Conversion

Teamwork

Exploring Elastic Potential Energy (Mousetrap Car) In this lesson, students will: 1. Explore the concept of Elastic Potential Energy (EPE) and its conversion to Kinetic Energy (KE). 2. Design and build their own rubber band-powered car using provided materials. 3. Test and evaluate the performance of their rubber band car in terms of distance traveled.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 5

DESCRIPTORS

- [General Science — Physical Science]
Explore how elastic potential energy converts into motion.

48 Investigate Magnetism (Magnet Racers)

[Level 2 \(Explore\)](#)



Magnetism

Design Thinking

Teamwork

Investigating Magnetism (Magnet Racers) In this lesson, students will: 1. Investigate the concept of magnetic repulsion and its properties. 2. Analyze the behavior and applications of magnets in real-world contexts. 3. Create a magnet-powered racing car using specified materials.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 5

DESCRIPTORS

- [General Science — Physical Science]
Investigate magnetic repulsion and attraction through a built racer.

49 Exploring Energy Conversion in a Playground

Level 2 (Explore)



Students take on the challenge of turning playground fun into a hands-on energy investigation! In groups, they design and build a simple playground model that shows how energy changes form through motion, height, force, and speed. Along the way, they observe, test, measure, and improve their ideas as they compare different mechanisms and explain what is happening. By the end of the lesson, they should be familiar with how energy is converted and produce a tangible representation through their creations!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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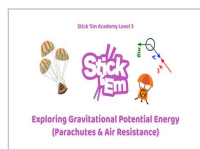
Grade 5

DESCRIPTORS

- [General Science — Physical Science] Model how energy converts between forms in playground equipment.

50 Explore Air Resistance with Parachutes

Level 3 (Apply)



Air

Resistance

Problem Solving

Teamwork

Exploring Air Resistance with Parachutes In this lesson, students will: 1. Explore the concept of air resistance and its impact on falling objects. 2. Build a parachute to test air resistance using a plastic bottle. 3. Evaluate the effectiveness of their parachute designs based on landing performance.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate air resistance and its effect on a falling object.

51 Explore Elastic Potential Energy (Balloon-Powered Car)

Level 3 (Apply)



Elastic Energy

Energy Conversion

Problem Solving

Design Thinking

1. Analyze the conversion of elastic potential energy into kinetic energy using a balloon-powered car. 2. Create a balloon-powered car that utilizes energy concepts. 3. Evaluate the design of the car to optimize distance traveled.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Analyse the conversion of elastic potential energy into kinetic energy.

52 Explore Gravitational Potential Energy (Marble Run)

Level 3 (Apply)



Gravitational Energy

Energy Conversion

Creativity

Teamwork

Exploring Gravitational Potential Energy (Marble Run) In this lesson, students will: 1. Explore the concepts of gravitational potential energy and kinetic energy. 2. Analyze how the angle of a slope affects the speed of a marble in a marble run. 3. Design and build a marble run that incorporates principles of energy conversion and friction. 4. Evaluate the performance of their marble run based on timing and speed of the marble.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Explore gravitational potential and kinetic energy in a marble run track.

53 Explore Plant Life Cycles (Seed Dispersion)

Level 3 (Apply)



Biology

Creativity

Exploring Plant Life Cycles (Seed Dispersion) In this lesson, students will: 1. Analyze the different stages in the life cycle of plants. 2. Evaluate the methods of seed dispersal and their significance. 3. Create a model seed that mimics a specific seed dispersal technique.

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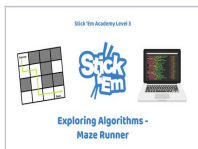
Grade 7

DESCRIPTORS

- [General Science — Life Science] Analyse stages of a plant life cycle and methods of seed dispersal.

54 Explore Algorithms - Maze Runner

Level 3 (Apply)



Computing

Critical, Adaptive & Inventive Thinking

Problem Solving

Exploring Algorithms - Maze Runner In this lesson, students will: 1. Create a simple maze using masking tape. 2. Analyze algorithms as sets of instructions to solve problems. 3. Build and program a robotic car to navigate a maze. 4. Evaluate the effectiveness of their algorithms through testing. 5. Collaborate in teams to improve their maze-solving code.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 7

DESCRIPTORS

- [AI & Robotics — Programming & Logical Thinking] Analyse algorithms as sets of instructions that solve a navigation problem.

55 Design Study Focus Tools

Level 4 (Innovate)



Motion Control Creativity Problem Solving

Design Thinking

Designing Study Focus Tools In this lesson, students will: 1. Analyze the concept of automation and its impact on studying. 2. Evaluate personal distractions that affect study sessions. 3. Create a device or method to minimize distractions and enhance concentration.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Analyse automation and apply it to a tool that reduces distraction.

56 Learn about Mars (Red Planet Rover)

Level 4 (Innovate)



Space Creativity Design Thinking

Learning about Mars In this lesson, students will: 1. Explore the physical characteristics of Mars and its challenging terrain. 2. Analyze the atmosphere of Mars and its implications for human exploration. 3. Design and create a model of a Mars Rover to overcome specific challenges on the planet.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 10

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Design an autonomous rover capable of navigating a challenging terrain.

57 Design Explosive Disposal Robots

Level 4 (Innovate)



Creativity Critical Thinking Teamwork

Designing Explosive Disposal Robots In this lesson, students will: 1. Analyze the differences between remote control car and drone controllers. 2. Evaluate the advantages of using drones in various applications, including explosive ordnance disposal. 3. Build an explosive disposal robot and navigate it to complete a mission.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Evaluate remote-control systems for a robot built to complete a hazardous task safely.

58 Build a Scissor Lift Mechanism

Stick 'Em Mechanisms



Students dive into the exciting world of mechanical engineering by tackling the challenge of designing and building a scissor lift mechanism that could solve lifting problems in various industries! Through hands-on collaboration, they engineer innovative prototypes, utilizing materials to create sturdy structures that effectively raise and lower objects. As they iterate on their designs, students test their creations, evaluate performance, and refine mechanisms based on peer feedback. The final product showcases their understanding of mechanics and problem-solving skills, culminating in a functional scissor lift that demonstrates both creativity and engineering prowess!

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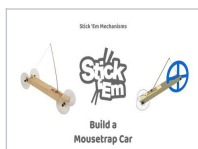
Grade 7

DESCRIPTORS

- [General Science — Physical Science]
Investigate mechanical advantage through a scissor-lift structure.

59 Build a Mousetrap Car

Stick 'Em Mechanisms



Students dive into the fascinating world of engineering by tackling the challenge of creating a mousetrap car, exploring how potential energy can be transformed into kinetic energy! In this hands-on project, learners design and construct their own vehicles using simple materials and mechanisms, fostering creativity and problem-solving skills. They collaborate in teams to iterate on their designs, engineer efficient propulsion systems, and test their cars for speed and distance. Through this engaging process, students not only produce a functional mousetrap car but also demonstrate their understanding of basic engineering principles and the iterative design process, culminating in an exciting race to see whose car goes the furthest!

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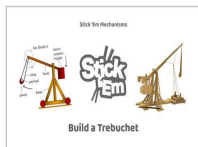
Grade 7

DESCRIPTORS

- [General Science — Physical Science]
Investigate how stored potential energy converts into a vehicle's motion.

60 Build a Trebuchet

Stick 'Em Mechanisms



Students embark on an exciting engineering challenge as they explore the physics behind medieval siege weapons by building a trebuchet! In this hands-on lesson, learners collaborate to design and construct their own trebuchets using everyday materials. They engineer prototypes, test their designs for accuracy and distance, and iterate on their original models based on their findings. By the end of the lesson, each team showcases their working trebuchets in a friendly competition, demonstrating their understanding of mechanics and physics principles, while also providing evidence of their design thinking process through documentation and reflections!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science]
Investigate forces and energy transfer through a historical siege mechanism.

61 Build a Slingshot

Stick 'Em Mechanisms



Students dive into the exciting world of engineering by tackling the challenge of creating an effective slingshot to launch projectiles over varying distances! In this hands-on lesson, learners design and construct their own slingshots using everyday materials, fostering creativity and resourcefulness. They collaborate in teams to prototype their mechanisms, test their designs, and iterate based on findings, honing their problem-solving skills. As a culmination of the learning experience, students showcase their innovative slingshots and present data on launch distances, demonstrating their understanding of mechanics and design principles—prepare for some serious fun and learning!

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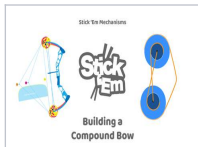
Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate elastic energy and projectile motion through a built slingshot.

62 Building a Compound Bow

Stick 'Em Mechanisms



Students explore the engineering challenge of creating a functional compound bow, a device that combines strength and precision to propel arrows effectively. They build and construct their own prototype using various materials, learning to design intricate mechanisms that mimic real-world bow designs. Throughout the process, students collaborate in teams to engineer their creations, iterate on their designs, and test their bows for accuracy and performance. The culmination of the lesson sees students demonstrate their working compound bows in a friendly competition, showcasing their understanding of physics and mechanics while reflecting on their learning through hands-on application!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate elastic energy and mechanical advantage in a compound mechanism.

63 Build a Stair Climbing Robot

Stick 'Em Mechanisms



Students dive into the exciting challenge of designing a robot capable of climbing stairs, an essential skill in navigating complex environments! They engage in hands-on construction, as they engineer a functional stair-climbing robot using innovative Stick'Em Mechanisms. Through collaboration, they prototype their designs, test different configurations, and evaluate performance to overcome obstacles. By the end of the lesson, students demonstrate their robots' capabilities in a mini-challenge, showcasing their problem-solving skills and understanding of engineering principles. Get ready to build and conquer those stairs!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Design a robot locomotion system capable of navigating obstacles.

64 Build a Hand powered Flying Toy

Stick 'Em Mechanisms



Make a T shape, add cardboard/paper wings so that when you spin the bottom of the T with both your palms, the glider will spin and fly upwards

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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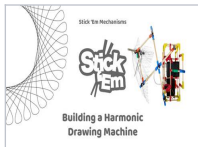
Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate forces of flight through a simple spinning flyer.

65 Build a Harmonic Drawing Machine

Stick 'Em Mechanisms



Students dive into the fascinating world of sound and mechanics as they explore the challenge of creating a unique drawing machine that produces harmonic patterns! They engage hands-on by designing and constructing their own machines using a variety of materials and mechanisms. Throughout the process, students collaborate in teams, iterate on their designs, and test their prototypes to achieve the desired harmonic effects. By the end of the lesson, each team showcases their innovative drawing machines, demonstrating a vibrant display of art and mechanics while reflecting on their learning journey through critical evaluation and presentation!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate mechanical motion and pattern-making through a drawing machine.

66 Building Automaton (Wave Motion Robots)

Stick 'Em Mechanisms



Students embark on an exciting journey to tackle the challenge of creating automaton that replicate wave motion, exploring principles of movement and mechanics! Through hands-on activities, they design, engineer, and prototype their own wave motion robots, utilizing a variety of materials and tools. As they collaborate in teams, students test their designs, iterate based on performance feedback, and evaluate the mechanics of their creations. The culmination of this lesson is a fully functional automaton that students proudly showcase, demonstrating their understanding of mechanical principles and the engineering process with creativity and ingenuity!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Build a mechanical system that replicates a repeating wave motion.

67 Build a Cable Car

Stick 'Em Mechanisms



Students tackle the challenge of designing an efficient cable car system, reflecting on urban transportation needs! They collaboratively engineer and construct miniature cable cars using various materials, integrating principles of mechanics and movement. Throughout the process, learners design prototypes, test their durability, and iterate their designs based on performance feedback, fostering teamwork and critical thinking. The culmination of their efforts results in fully operational cable cars that demonstrate their understanding of engineering concepts and problem-solving skills, showcasing their tangible creations in a group presentation that highlights their learning journey and innovative solutions!

ALIGNED DESCRIPTORS

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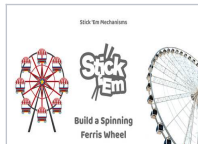
Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Engineer a cable transport system reflecting real urban mobility needs.

68 Build a Ferris Wheel

Stick 'Em Mechanisms



Students embark on an exciting challenge to create their very own Ferris wheel, exploring the real-world application of mechanical systems. They design and engineer unique structures using various materials, bringing their ideas to life through hands-on construction. As they collaborate in teams, they prototype and iterate their designs, testing for stability and functionality. By the end of the lesson, students showcase their spinning Ferris wheels, demonstrating key engineering principles and the learning process through their finished projects! This engaging experience not only fosters creativity but also solidifies understanding of Stick 'Em Mechanisms.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Design a rotating mechanical system, exploring balance and motion.

69 Build a Music Playing Robot

Stick 'Em Mechanisms



Students tackle the challenge of creating a music-playing robot that can bring melodies to life through innovative engineering! They design and build a unique robot using the Stick'Em Mechanisms system, integrating simple electronics and creative components. As they collaborate in teams, they prototype their ideas, iterate on their designs, and test the functionality of their creations. By the end of the lesson, students produce fully operational robots that play music, demonstrating their understanding of mechanical principles and circuitry. This engaging hands-on experience not only fosters teamwork but also ignites a passion for STEM learning!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 7

DESCRIPTORS

- [AI & Robotics — Robotic Components & Advanced Robotics] Build a mechanism that produces sound and motion together.

70 Training an AI powered scarecrow

Stick 'Em AI



Students dive into the fascinating world of artificial intelligence by tackling the challenge of training an AI-powered scarecrow to protect crops from pests! They design and build a unique scarecrow prototype equipped with sensors and AI capabilities. Collaborating in teams, students engineer the scarecrow's functionality, iterating on their designs by testing and evaluating its effectiveness in detecting intruders. Ultimately, students demonstrate their learning by presenting their working models, showcasing how their AI scarecrows interact with the environment and apply machine learning principles to solve real-world agricultural problems. Get ready for an exciting blend of technology and creativity!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Train a model to recognise pests and trigger a deterrent response.

71 Training an Automatic Feeder (Assistive Technology)

Stick 'Em AI



Students tackle the real-world challenge of developing an automatic feeder for pets using assistive technology! They design and engineer a functional prototype that responds to specific feeding patterns. Through collaboration and iteration, participants learn to test their designs, evaluate performance, and refine their creations to meet preset criteria. By the end of the lesson, students showcase their prototypes, demonstrating how their feeder utilizes AI and machine learning principles, while also reflecting on the effectiveness of their solutions in addressing pet care needs. Join us for this exciting blend of creativity and technology!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Practical Applications of AI & Robotics] Design an automated assistive feeding device.

72 Training an AI Pet Feeder System

Stick 'Em AI



Students dive into the exciting world of artificial intelligence as they tackle the challenge of designing a pet feeder system that can determine optimal feeding times and portion sizes based on their pet's behavior. Through hands-on activities, learners engineer and prototype a functional AI model, collaborating in teams to create a user-friendly interface that connects to real-time data. They iteratively test and evaluate their systems, refining algorithms to improve feeding accuracy and efficiency. At the conclusion of the lesson, students proudly present their innovative AI pet feeder prototypes, showcasing their problem-solving skills and understanding of machine learning principles!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Train a model to make automated feeding decisions.

73 Training an Automated Trash Sorting Bin

Stick 'Em AI



Students tackle the pressing issue of waste management by training an automated trash sorting bin to recognize and categorize recyclable materials! They construct a prototype bin equipped with sensors and programming to detect different types of trash. As they collaborate, they design algorithms, engineer solutions, and test their models to improve accuracy. Throughout the process, students iterate on their designs, refining their systems based on evaluation and feedback. The final product showcases a fully functional trash sorting bin that demonstrates students' understanding of AI and machine learning principles, serving as evidence of their ability to apply STEM skills to real-world challenges.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Train a model to classify and sort recyclable materials.

74 Training a Scissor Paper Stone Robot

Stick 'Em AI



Students dive into the exciting world of artificial intelligence by tackling the challenge of training a Scissor Paper Stone robot! They collaborate to design and engineer a robot capable of mastering this classic game through the principles of machine learning. As they prototype their robots, students test various strategies and iterate their designs based on performance data and outcomes. By the end of the lesson, students showcase their AI-powered creations in an engaging competition, demonstrating their understanding of machine learning concepts and the importance of data-driven decision-making. Get ready to witness innovation in action!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 9

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Train a model to recognise and respond to hand gestures.

75 Vibecoding a Stick 'Em Web App

Stick 'Em AI



ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Computer Science

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Grade 11

DESCRIPTORS

- [Computer Science — Programming Fundamentals] Build a working web application using front-end programming.

76 Designing Derby Cars (GPE & Wind Resistance)

Stick 'Em Makers



Students dive into the exciting world of physics as they tackle the real-world challenge of designing faster derby cars while considering the impact of wind resistance! They construct their own cars using various materials, fully engaging in the design and engineering processes. Through collaboration and iteration, they prototype multiple designs, test their vehicles on the track, and gather data on performance. Ultimately, students showcase their derby cars and provide evidence of their learning by analyzing results and presenting their findings, igniting a passion for STEM concepts in motion!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 6

DESCRIPTORS

- [General Science — Physical Science]
Design a vehicle that manages energy and wind resistance for speed.

77 Mastering Cardboard with Stick 'Em

Stick 'Em Makers



This lesson helps students to explore different uses of cardboard, combining it with their Stick 'Em Creations to add new layers of complexity!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

public + private + madrassah · verified 2026

Grade 6

DESCRIPTORS

- [Art — Techniques and Materials] Explore a material's properties and combine it with other techniques.

78 Exploring the Past-Present-Future of Transportation

Level 1 (Learn)



Students embark on an exciting journey through time, exploring the evolution of transportation and its impact on society! They design and create models representing various modes of transport throughout history, from ancient chariots to futuristic electric vehicles. By collaborating in teams, they engineer prototypes, test their functionality, and iterate on designs based on peer feedback. Ultimately, students present their innovative transportation models alongside an engaging narrative that connects the past, present, and future, demonstrating their understanding of historical changes and technological advancements in transportation. This hands-on experience reinforces critical thinking and creativity while fostering teamwork and communication skills!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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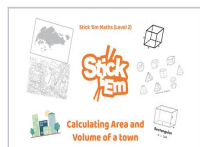
Grade 4

DESCRIPTORS

- [AI & Robotics — ICT Fundamentals]
Explore how technology changes over time by modelling old and new transport.

79 Exploring Area & Volume of a Town

Level 2 (Explore)



Students dive into the fascinating world of geometry as they explore the real-life challenge of understanding the area and volume in their own town! By working collaboratively, they design and construct 3D models of various community buildings, such as schools and parks, using precise measurements to represent their dimensions accurately. Through hands-on prototyping, they test and iterate their designs, gaining essential skills in measurement and spatial reasoning. In the end, students present their models, showcasing their ability to calculate and evaluate the area and volume, while demonstrating a deeper appreciation for the mathematics that shapes their community!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

public + private + madrassah · verified 2026

Grade 5

DESCRIPTORS

- [Mathematics — Measurement] Calculate area and volume of structures in a real-world town model.

80 Calculating Speed of a Robot

Level 2 (Explore)



Students dive into the exciting world of robotics by exploring the real-world challenge of measuring speed and efficiency in robot design! They create their own robotic models using various materials, then collaborate to engineer methods for calculating their robots' speed. Through hands-on experimentation, they design prototypes, test their creations, and iterate on their designs based on performance feedback. By the end of the lesson, students present their findings with visual demonstrations of their robots in action, showcasing their understanding of speed calculation and the principles of motion. Get ready for a thrilling STEM adventure!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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Grade 5

DESCRIPTORS

- [Mathematics — Measurement] Measure distance and time and calculate speed for a moving robot.

81 Writing Procedural Texts for Robots

Level 2 (Explore)



Students dive into the exciting world of robotics by exploring how to write clear and effective procedural texts for robots! They design and create step-by-step instructions that guide robotic movements and tasks, fostering critical thinking and problem-solving skills. As they collaborate with peers, they engineer intricate commands, iteratively test their procedures, and evaluate the outcomes of their robotic creations. By the end of this lesson, students produce well-structured procedural texts that not only direct the robots but also showcase their understanding of language and coding principles, demonstrating their learning in a fun and hands-on way!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 5

DESCRIPTORS

- [AI & Robotics — Problem Solving and Programming Fundamentals] Sequence clear step-by-step instructions for a robot to follow.

82 Learn about Dragon Boat Festivals

Level 2 (Explore)



Dive into the vibrant world of Dragon Boat Festivals as students explore the cultural significance and traditions surrounding this exciting event! Learners design and create their own dragon boats using a variety of materials, encouraging them to collaborate and iterate on their designs. Through testing their creations in simulated waters, students evaluate performance, working together to fine-tune their designs for optimal speed and stability. The end product is a fully functional dragon boat and a presentation showcasing what they've learned about this fascinating cultural celebration, demonstrating their understanding of the festival's history and importance within the community!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

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Grade 5

DESCRIPTORS

- [Art — Cultural Art & Craft] Explore cultural traditions and symbols through a hands-on making project.

83 Design Geometric Lanterns (Lantern Festival)

Level 2 (Explore)



Students dive into the vibrant world of geometric design by exploring the cultural significance of lanterns during the Lantern Festival! They engage in hands-on activities to construct their own unique lanterns, utilizing various materials and techniques. Over the course of this interactive experience, students collaborate to brainstorm ideas, prototype their designs, and iterate based on feedback. By the end of the lesson, they proudly showcase their lanterns, demonstrating their understanding of geometric principles and design processes, while also reflecting on the cultural heritage they represent! Get ready to light up creativity and innovation!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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Grade 5

DESCRIPTORS

- [Mathematics — Geometry] Design and construct 2D/3D geometric shapes for a cultural lantern.

84 Learn about Gliders (Aerodynamics)

Level 2 (Explore)



Students dive into the fascinating world of aerodynamics as they tackle the challenge of designing and building their own gliders! Through hands-on exploration, learners engineer unique glider prototypes, applying principles of physics and design thinking. They collaborate in teams to test their creations, gather data, and evaluate performance, all while iterating on their designs to improve flight distance and stability. By the end of the lesson, students proudly showcase their final glider models, equipped with insights on aerodynamics and a deeper understanding of the scientific method. Get ready to soar high with your newfound knowledge of flight mechanics!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 5

DESCRIPTORS

- [General Science — Physical Science] Investigate forces of lift and air resistance by designing a glider.

85 Design Greenhouses for plants

Level 3 (Apply)



Designing Greenhouses for Plants with Chopsticks In this lesson, students will: 1. Explore the purpose and importance of greenhouses for plant growth. 2. Investigate how environmental factors such as light, temperature, and humidity affect plant health. 3. Design and construct a functional greenhouse model using chopsticks and connectors. 4. Test and evaluate their greenhouse designs by observing plant growth and environmental control. 5. Iterate on their designs to improve stability, insulation, and effectiveness.

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — General Science
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Grade 7

- DESCRIPTORS**
- [General Science — Life Science]
Investigate the conditions plants need to grow and design a structure that provides them.

86 Designing an Inclusive Playground

Level 3 (Apply)



Students tackle the challenge of creating an inclusive playground that accommodates children of all abilities! They brainstorm ideas, design accessible play structures, and engineer prototypes that incorporate sensory-rich elements. Throughout the process, students collaborate in teams, iterate on their designs, and evaluate usability to ensure each aspect meets the needs of diverse users. By the end of the lesson, they showcase their innovative playground models, providing evidence of their learning through presentations that highlight the importance of inclusivity in design. Get ready to inspire creativity and empathy in engineering solutions!

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — Art
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Grade 7

- DESCRIPTORS**
- [Art — Art & Society] Design accessible play structures that meet the needs of all users.

87 Exploring Assistive Tech for the Visually Impaired

Level 3 (Apply)



Students dive into the world of assistive technology as they tackle the challenge of enhancing accessibility for the visually impaired! Through the design thinking process, participants engineer innovative solutions by brainstorming ideas, prototyping assistive devices, and testing their functionality in real-life scenarios. Working collaboratively, they iterate on their designs based on feedback and evaluate the effectiveness of their solutions. The culmination of this hands-on experience is the creation of a functional prototype that showcases their understanding of user needs and the principles of design thinking, allowing them to demonstrate their learning and apply their skills in a meaningful way!

ALIGNED DESCRIPTORS
National Curriculum of Pakistan (NCP/SNC) — AI & Robotics
public + private + madrassah · verified 2026
Grade 7

- DESCRIPTORS**
- [AI & Robotics — Practical Applications of AI & Robotics] Design an assistive device that enhances accessibility.

88 Exploring Landmarks in Southeast Asia

Level 3 (Apply)



Students embark on an exciting journey as they explore iconic landmarks in Southeast Asia, uncovering their historical significance and cultural relevance. They collaborate to design and create detailed 3D models of their chosen landmarks, applying engineering principles to bring their visions to life. Throughout this engaging process, learners iterate their designs, test stability and aesthetics, and evaluate their models against real-world criteria. In the end, students proudly present their intricate models, demonstrating not only their newfound knowledge of Southeast Asian culture but also their skills in research, creativity, and teamwork! This lesson inspires a deeper appreciation for global diversity and innovation.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

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Grade 7

DESCRIPTORS

- [Art — Cultural Art & Craft] Explore historical and cultural landmarks through a making project.

89 Learning about the Seven Wonders of the World

Level 3 (Apply)



Students embark on an exciting exploration of the Seven Wonders of the World, diving into the rich history and cultural significance of these iconic landmarks! They collaborate in teams to design scaled models of their chosen wonder, incorporating critical thinking and creativity. Through the engineering process, students prototype their structures, evaluate stability, and iterate on their designs, learning to apply principles of architecture and geography. As a culminating project, each team presents their model alongside a detailed report, showcasing their understanding of historical context and demonstrating their newfound knowledge in captivating ways!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Art

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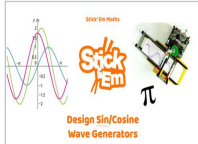
Grade 7

DESCRIPTORS

- [Art — Cultural Art & Craft] Explore historical landmarks through a hands-on building project.

90 Design Sin/Cosine Wave Generators

Level 3 (Apply)



Students tackle the challenge of creating an engaging and interactive way to visualize sine and cosine waves! Working collaboratively, they design and engineer unique wave generators that allow them to manipulate and observe these mathematical functions in action. Throughout the process, they prototype their devices, test for accuracy, and evaluate the effectiveness of their designs in producing smooth wave patterns. By the end of the lesson, students produce a fully operational sine and cosine wave generator that not only demonstrates their understanding of mathematical concepts but also showcases their innovative engineering skills!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Mathematics

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Grade 9

DESCRIPTORS

- [Mathematics — Geometry] Model and visualise sine and cosine wave functions with a built mechanism.

91 Prototyping Flying Kites

Level 3 (Apply)



Students tackle the exciting challenge of designing and engineering their very own flying kites, diving into the principles of aerodynamics and teamwork! They collaborate to prototype unique kite structures using various materials, testing and iterating on their designs to enhance performance. Throughout the process, students evaluate their kites' flight capabilities, using hands-on experimentation to refine their creations. By the end of this lesson, students proudly showcase their functional kites, demonstrating their understanding of the scientific concepts behind flight and the engineering design process in a fun and engaging way! Let's watch those kites soar!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

public + private + madrassah · verified 2026

Grade 7

DESCRIPTORS

- [General Science — Physical Science] Apply principles of aerodynamics to design and test a flying kite.

92 Design solutions for Noise Pollution (Window Design)

Level 3 (Apply)



Students tackle the pressing challenge of noise pollution by exploring innovative window designs that effectively minimize sound transmission! In this engaging lesson, they engineer prototypes of soundproof windows, applying design thinking principles while working collaboratively. Participants actively design, test, and evaluate their creations, iterating based on feedback to enhance performance. The culmination of their efforts results in a functional window model that demonstrates their understanding of acoustics and engineering principles, showcasing their ability to address real-world problems through STEM innovation. Get ready to make some noise—silencing it, that is!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Investigate how materials and design reduce sound transmission.

93 Designing Wind Turbine Blades

Level 3 (Apply)



Students dive into the challenge of harnessing wind energy to create sustainable solutions for our planet! They collaborate to design and engineer their own wind turbine blades, experimenting with shapes and materials to optimize functionality. Throughout the process, they prototype their designs, test their turbines against various wind conditions, and iterate based on data collected from their testing. The end product is a fully functional wind turbine that demonstrates their understanding of renewable energy concepts and showcases their ability to apply engineering principles in real-world contexts. Join us in this exciting exploration of sustainability and innovation!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 7

DESCRIPTORS

- [General Science — Physical Science] Design and test blade shapes for harnessing wind energy.

94 Designing Coastal Protection Strategies

Level 4 (Innovate)



Students tackle the pressing challenge of coastal erosion and climate change by designing innovative coastal protection strategies! They collaborate to engineer and prototype diverse solutions such as sea walls, natural barrier systems, and flood-resistant structures. Through the iterative process of evaluating their designs, students test their prototypes against real-world scenarios, refining their ideas to enhance effectiveness. By the end of this engaging lesson, students produce detailed models accompanied by reports that showcase their final designs and demonstrate their understanding of sustainable practices in protecting our coastlines.

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 9

DESCRIPTORS

- [General Science — Earth & Space Sciences] Design engineering solutions to coastal erosion and climate impacts.

95 Design Fidget Toys

Level 4 (Innovate)



Students dive into the exciting world of fidget toys, exploring the real-world challenge of creating stress-relieving tools that enhance focus and concentration! In this hands-on session, young innovators design and construct their own unique fidget toys, utilizing various materials and tools. They engineer their prototypes through a collaborative process, testing different mechanisms to ensure functionality and appeal. Students iterate on their designs based on peer feedback, ultimately producing an engaging final product that reflects their creativity and problem-solving skills. The lesson culminates in a showcase where students demonstrate their toys, highlighting their learning journey and the engineering process behind their inventions!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — General Science

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Grade 9

DESCRIPTORS

- [General Science — Physical Science] Apply mechanics to design a small device with moving parts.

96 Imagining Jobs of the Future

Level 4 (Innovate)



Students dive into the exciting world of Futures Thinking by exploring the challenges and opportunities presented by emerging technologies and evolving career landscapes! They brainstorm imaginative job roles, design innovative workplace solutions, and create prototypes that showcase their visions of the future job market. Collaborating in teams, they research industry trends, engineer creative ideas, and iterate their designs based on feedback. The end product features a presentation of their unique concepts, complete with prototypes and a strategic plan, demonstrating their understanding of future-ready skills and their ability to envision and shape tomorrow's careers!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

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Grade 10

DESCRIPTORS

- [AI & Robotics — Ethics, Laws & Careers in AI & Robotics] Explore career pathways and skills emerging technologies will demand.

97 Imagining Human Upgrades (Cybernetics)

Level 4 (Innovate)



Students dive into the fascinating world of cybernetics, exploring how technology can enhance human capabilities and solve real-world challenges. They design and construct innovative prototypes of human upgrades, such as advanced wearables or assistive devices, using a variety of materials. Throughout the lesson, they collaborate in teams to engineer solutions, test prototypes, and iterate on their designs based on feedback. By the end of the session, students showcase their final products and demonstrate their understanding of futures thinking through engaging presentations, highlighting the potential impacts of their upgrades on society. Get ready to innovate and imagine the future!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — AI & Robotics

public + private + madrassah · verified 2026

Grade 10

DESCRIPTORS

- [AI & Robotics — Machine Learning & AI Algorithms] Explore how AI and robotics could extend human capability.

98 Imagining Futuristic Cities

Level 4 (Innovate)



Students engage in the exciting challenge of envisioning and designing futuristic cities that address pressing urban issues! Through hands-on collaboration, they brainstorm innovative solutions, build detailed models, and utilize sustainable materials to represent their ideas. Participants apply critical skills as they design blueprints, engineer functional spaces, and test their creations against real-world criteria. The culmination of their efforts results in captivating city models that showcase their imaginative thinking and problem-solving abilities, providing tangible evidence of their learning and readiness to contribute to a sustainable future. Get ready to innovate and inspire!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Computer Science

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Grade 10

DESCRIPTORS

- [Computer Science — Entrepreneurship in the Digital Age] Apply design thinking to envision solutions for future urban challenges.

99 Imagining Schools of The Future

Level 4 (Innovate)



Students embark on an exciting journey to envision and design schools of the future, addressing contemporary challenges such as inclusivity and sustainability! They collaborate to brainstorm innovative concepts and engineer prototypes that reflect their imaginative ideas. Throughout the process, participants critically evaluate their designs and iterate on their solutions, fostering a deeper understanding of futures thinking. The final product, a comprehensive model or digital representation of their school, serves as a testament to their creativity and problem-solving skills, showcasing their ability to rethink education for a better tomorrow!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan (NCP/SNC) — Computer Science

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Grade 10

DESCRIPTORS

- [Computer Science — Entrepreneurship in the Digital Age] Apply design thinking to envision inclusive, sustainable school design.

100 **Imagining Life on Another Planet**

Level 4 (Innovate)



Students embark on an exciting journey to imagine life on another planet, grappling with the challenges of extraterrestrial environments and ecosystems! They construct their own habitats and lifeforms using innovative materials and creative designs. Collaborating in teams, students engineer concepts, prototype solutions, and evaluate the viability of their creations through hands-on testing. As a culmination of their efforts, each group presents their unique planetary ecosystem, showcasing a detailed model and explaining the processes that led to their innovative ideas. This engaging lesson fosters critical thinking, creativity, and teamwork, demonstrating students' ability to envision and create sustainable futures!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan
(NCP/SNC) — General Science

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Grade 9

DESCRIPTORS

- [General Science — Earth & Space Sciences]
Analyse the challenges of extraterrestrial environments for life.

101 **Eco-Stewardship Race**

Activity/Challenge Only



Students dive into the pressing challenge of eco-stewardship by exploring ways to promote environmental sustainability! They collaborate to design and engineer innovative robotic solutions that can assist in recycling and waste management. Through hands-on activities, students prototype their creations, testing and iterating on their designs to maximize efficiency and effectiveness. The culmination of this exciting endeavor is a showcase where students display their final prototypes and demonstrate their understanding of eco-friendly practices, underscoring the importance of technology in addressing real-world environmental issues. Join the race towards a greener future!

ALIGNED DESCRIPTORS

National Curriculum of Pakistan
(NCP/SNC) — General Science

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Grade 6

DESCRIPTORS

- [General Science — Earth and Space Science] Engineer a solution that promotes environmental sustainability.

102 **How To: Organise Makerfares**

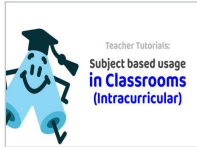
Teacher Resources



Explore the exciting world of Makerfares as educators learn to design and organize engaging community events! Participants collaborate to engineer innovative activities that inspire creativity and hands-on learning for all ages. They prototype and test various workshop ideas while evaluating logistics, resources, and outreach strategies to ensure success. By the end of the lesson, teachers produce a comprehensive planning guide that serves as evidence of their understanding of event organization, equipped with actionable insights and inspiration to launch their own Makerfaire. Get ready to ignite a passion for making in your community!

103 Subject Based Usage in Classrooms (Intracurricular)

[Teacher Resources](#)



Explore the integration of subject-based resources in classrooms to enhance teaching effectiveness and student engagement! Educators collaborate to design and refine curriculum strategies that incorporate dynamic materials tailored to diverse learning styles. Through hands-on activities, participants engineer lesson plans that effectively utilize these resources, test their applicability in real classroom scenarios, and evaluate their impact on student learning outcomes. By the end of the session, teachers produce comprehensive resource guides that not only demonstrate their understanding of subject-based pedagogy but also serve as valuable tools for future instruction. Get ready to transform your teaching approach!

104 Training Student Leaders

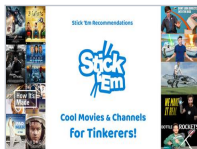
[Teacher Resources](#)



Unlock the potential of future leaders with our Training Student Leaders lesson! This engaging program challenges educators to evaluate the qualities that make strong leaders and design targeted activities that inspire student engagement. Teachers collaborate to create dynamic leadership workshops, engineer strategies for effective peer mentoring, and iterate on feedback to enhance their curriculum. By the end of the lesson, participants produce comprehensive leadership training manuals that showcase their tailored exercises and assessment tools, demonstrating their commitment to fostering leadership skills in students. Equip your classroom with the tools to cultivate confidence and capability in young leaders!

105 Movies & Channels for Tinkerers

[Additional Resources](#)



Dive into the world of creativity and innovation as students explore the fascinating intersection of technology and storytelling! Students design and engineer their own interactive media channels, collaboratively creating engaging content that captures their unique perspectives. Through hands-on activities, they prototype and test various formats, evaluating their projects to enhance audience engagement and storytelling impact. The final product is a captivating presentation where students showcase their original content, demonstrating not only their technical skills but also their ability to think critically and express their passions in dynamic ways!

106 Discovering your Passion

[Additional Resources](#)



Students embark on an exciting journey of self-discovery by exploring their interests and passions in various fields! Through engaging activities, they reflect on their strengths, experiment with different career paths, and connect with resources that ignite their enthusiasm. Participants investigate diverse opportunities, collaborate in small groups to share insights, and finally create a personalized passion profile that highlights their unique skills and aspirations. By the end of the lesson, students proudly present their passion profiles, demonstrating not only a clear understanding of their interests but also the steps they can take toward pursuing their dreams!

107 How to Elevator Pitch

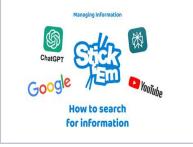
[Additional Resources](#)



Students dive into the art of persuasive communication as they tackle the challenge of crafting an elevator pitch! They collaborate in small groups to design engaging and concise pitches that capture attention. Throughout the lesson, participants practice their speaking and presentation skills, iterating on their ideas based on peer feedback. By the end, students showcase their final pitches, demonstrating their ability to convey essential information clearly and compellingly. This dynamic experience empowers learners to express themselves effectively in various contexts, equipping them with skills that transcend the classroom!

108 How to Search for Information

[Additional Resources](#)



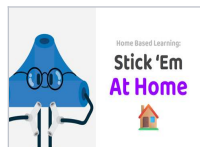
Students embark on an exciting quest to master essential information retrieval skills, which are crucial in today's digital landscape! They design effective search strategies, engineer advanced queries, and collaborate to navigate various databases and online resources. As they iterate and refine their methods, students learn to evaluate the credibility of sources and synthesize relevant information. By the end of the lesson, students produce a comprehensive guide showcasing their search techniques and curated resources, demonstrating their newfound ability to find reliable information efficiently. Prepare to unlock the power of inquiry and become savvy researchers!



Students dive into the art of storytelling and persuasion as they tackle the real-world challenge of creating an impactful pitch deck. They learn to design and engineer visually appealing slides that effectively communicate their ideas. Through collaboration, they iterate on their presentations, refining their content and visuals to ensure clarity and engagement. By the end of the lesson, students produce a polished pitch deck that showcases their unique concepts, demonstrating their understanding of effective communication and design principles in a professional context. Unleash your creativity and elevate your presentation skills!

110 Stick 'Em Activities at Home!

Additional Resources



Students explore the exciting challenge of bringing hands-on STEM activities into their home environment by designing and engineering creative projects using everyday materials! They collaborate with peers and family members to prototype innovative solutions, testing their creations through an iterative process. As they develop their projects, learners evaluate their designs, refining them based on feedback and results. At the end of the experience, students produce a variety of engaging prototypes that demonstrate their understanding of STEM concepts, showcasing their creativity and problem-solving skills. Dive into the fun of Stick 'Em Activities at Home and ignite your passion for learning!

111 101 Things to Build with Stick 'Em

Additional Resources



Students dive into the exciting world of makerspaces and robotics by tackling the challenge of creating innovative designs that solve everyday problems! They brainstorm and collaborate to build unique prototypes using Stick 'Em, a versatile construction material that sparks creativity. Throughout the lesson, students engineer their projects, test their functionality, and iterate on their designs based on peer feedback. As a culmination of their efforts, each participant presents their finished creations, showcasing their problem-solving skills and understanding of engineering principles. Get ready to unleash your imagination and transform ideas into tangible realities!

NEXT STEPS FOR TEACHERS

You now know which Stick'Em lessons fit your curriculum. Here's how to take it further:

Activity Planner (coming soon, under teacher.stickem.sg). Drag the lessons in this document into a custom scheme of work for your school, term by term.

teacher.stickem.sg — your teacher portal. Help desk, competition info, school dashboard, best-practice guides, and a gallery of what other Stick'Em teachers have built.

vibecode.stickem.sg — browser-based coding playground for students. Zero setup, runs on any school laptop. Pairs with the Stick'Em vibecoding lessons in this catalog.

Questions or need help mapping a scheme of work? Email founders@stickem.sg.

All these slides are available at Stick'Em Academy (academy.stickem.sg).