



Thornccliffe Association
Curriculum
Age 12 - 14



RoboThink is an international leader in STEM education, offering fun and engaging programs in **robotics, coding, and engineering** for children of all ages. Our hands-on curriculum is designed to spark curiosity, foster creativity, and build critical problem-solving skills.

Through guided activities, students learn to **design, build, and program robots** while developing teamwork, logical thinking, and confidence. Each session is structured to balance **learning and play**, ensuring that children not only gain valuable technical knowledge but also have fun throughout the process.

RoboThink programs are trusted by schools and learning centers worldwide and are carefully tailored to meet the needs of different age groups, ensuring that every student is challenged at the right level.

Our mission is simple: to inspire the next generation of **engineers, innovators, and problem solvers** through exciting, hands-on STEM experiences.



Program Description

Our **Space Camp Engineering & Robotics Program** takes students on an exciting adventure through space exploration and advanced engineering. Each week, students build hands-on mechanical and robotic models inspired by real machines used in space missions, planetary research, and futuristic technology.

Through guided lessons and creative building challenges, students learn problem-solving, engineering design, teamwork, and critical thinking while discovering how technology helps humans explore space. This program makes science fun, accessible, and highly engaging for young innovators.

Weekly Breakdown for Parents

Week 1 – Transformer

Students build a transforming robotic model, exploring how mechanisms shift shape and function for different tasks—similar to engineering designs that adapt to multiple environments in space missions.

Week 2 – Apex Wing

Students engineer a wing-based aircraft inspired by spaceplane concepts. They explore aerodynamics, lift, stability, and how spacecraft glide when returning through Earth's or Mars' atmosphere.

Week 3 – IR Satellite

Students build a satellite model to learn about orbiting technology used for communication, imaging, and collecting scientific data from space. They explore sensors, rotating mechanisms, and positioning systems.



Week 4 – Mars Rover

Students build a rover inspired by NASA's Mars exploration vehicles. They learn about rover mobility, terrain navigation, suspension systems, and the scientific tools rovers use to explore other planets.

Week 5 – Hover Craft

Students construct a hovercraft model and explore how air pressure creates lift. They experiment with friction reduction, surface gliding, and futuristic space transportation ideas.

Week 6 – Build Your Own Spaceship

Students apply all their knowledge to design and build a custom spaceship. They test design performance and present their spacecraft and engineering decisions to the class.

What Students Gain

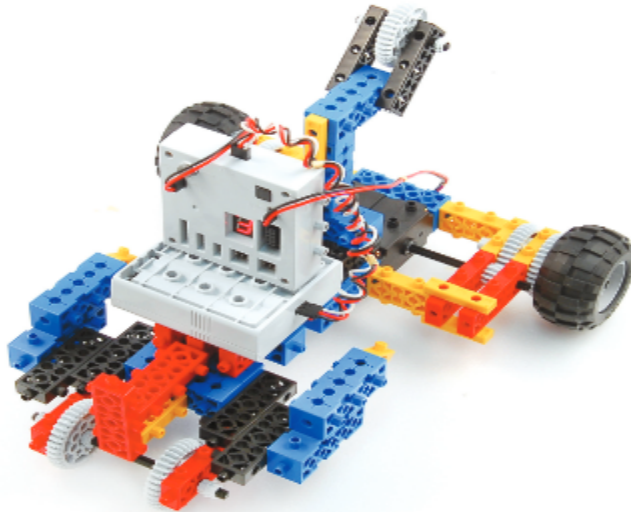
- Hands-on experience with engineering, robotics, and aerospace concepts
- Real-world understanding of space exploration technology
- Critical thinking, creativity, and design problem-solving skills
- Confidence through building and presenting original projects
- Teamwork, communication, and collaboration abilities

Robothink Schedule

Week	Activity
Week 1	Transformer
Week 2	Apex Wing
Week 3	I R Satellite
Week 4	Mars Rover
Week 5	Hover Craft
Week 6	Build your own Spaceship

SPACE CAMP

LESSON 1: TRANSFORMER



SPACE CAMP

LESSON 2: APEX WING



SPACE CAMP

LESSON 3: I R SATELLITE



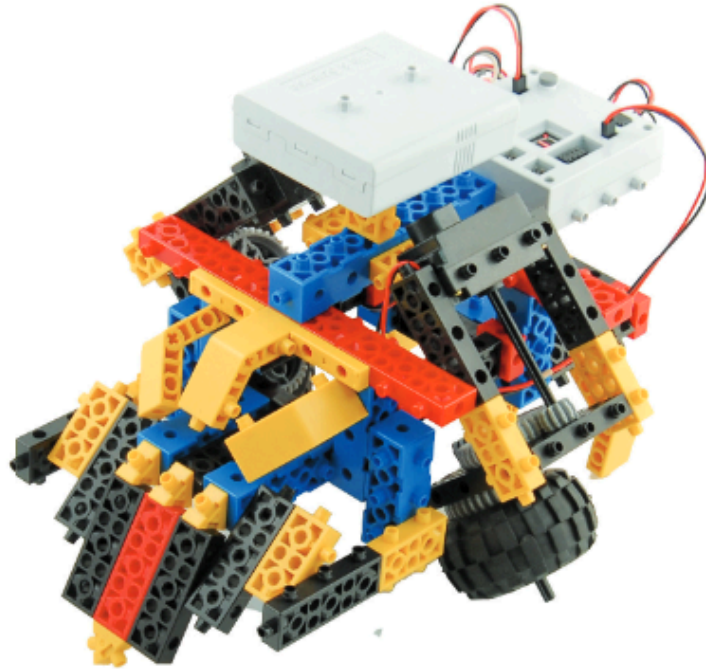
SPACE CAMP

LESSON 4: MARS ROVER



SPACE CAMP

LESSON 5: HOVER CRAFT



SPACE CAMP

LESSON 6: BUILD YOUR OWN SPACESHIP



