



WELCOME GUIDE



ABOUT MISSION X



Mission X Train Like an Astronaut is a free educational programme developed by space scientists and fitness professionals working with astronauts and space agencies across the world. Mission X uses the excitement of space exploration to inspire students to learn about science, nutrition, exercise and space. It is aimed at students aged 8 to 12 but the activities can be adapted to suit other ages. The programme can be delivered either through the curriculum, through collapsed timetable days, through homework challenges or clubs ... or a mixture!

The international challenge for Mission X runs each year from January to May. During the challenge, countries from across the world encourage their students to complete the mission challenges. Each country is made up of teams who complete activities and track their points. At the end of the mission, each team will submit their points on the website www.stem.org.uk/missionx. All of the submitted points help the Mission X mascot, Astro Charlie walk to the Moon. The international website also contains a range of video resources that you can use to support the activities in school. There is also a country community group that you can use to share ideas and to build friendships with schools from across the world.

CHECKLIST

You can use this checklist to help track the activities your team has completed.
Remember to submit your points on the www.stem.org.uk/missionx/challenge.

MISSION ACTIVITY	POINTS
AGILITY ASTRO COURSE	
BASE STATION WALKBACK	
BUILD AN ASTRONAUT CORE	
CLIMB A MARTIAN MOUNTAIN	
CREW ASSEMBLY	
CREW STRENGTH TRAINING	
EXPLORE AND DISCOVER	
PLANET YOU GO, GRAVITY YOU FIND	
JUMP FOR THE MOON	
MISSION CONTROL	
PEAKE LIFT OFF	
GET ON YOUR SPACE CYCLE	
SPACE ROLL 'N' ROLL	
SPEED OF LIGHT	
DO A SPACEWALK	
TASTE IN SPACE	
LIVING BONES, STRONG BONES	
ENERGY OF AN ASTRONAUT	
HYDRATION STATION	
A MICROBIAL BOX	
BUGS IN SPACE	
REDUCED GRAVITY, LOW FAT	
ROBOTIC ARM	
BIONIC HAND	

CHECKLIST

You can use this checklist to help track the activities your team has completed. Remember to submit your points on the www.stem.org.uk/missionx/challenge.

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ONLINE TOOLS AND RESOURCES

There are lots of organisations who can help you with your mission and provide additional resources. These include:

ESA Kids

www.esa.int/kids

ESA Education

www.esa.int/Education

The UK Space Education Resource Office

www.stem.org.uk/esero

UK Space Agency

www.gov.uk/government/organisations/uk-space-agency

NASA

www.nasa.gov/tla

There are some great video and photographic resources available on YouTube including:

- [UK Space Agency](#)
- [ESA](#)
- [NASA](#)

Mission Challenge

Introduce your team! Why not take a picture and introduce us to your local area. Schools across the world are interested to see how your training is progressing.

Tweet an update about Mission X using
@ESA_Education
#missionx19

Follow these astronauts on Twitter:

@astro_timpeake – Tim Peake
@astro_DavidS – David Saint-Jacques
@astro_luca – Luca Parmitano
@astro_andreas – Andreas Mogensen

@AstroSamantha – Samantha Cristoforetti
@Thom_astro – Thomas Pesquet
@Astro_Alex – Alexander Gerst
@explornaut – Matthias Maurer



astro card

GETTING STARTED

STEP 1: REGISTER

To get started, visit the [website](http://www.stem.org.uk/missionx/how-to-sign-up) (www.stem.org.uk/missionx/how-to-sign-up) and be sure to register in your country.

STEP 2: DOWNLOAD ACTIVITIES

Visit the [website](http://www.stem.org.uk/missionx/resources) (www.stem.org.uk/missionx/resources) to download all of the physical and educational activities you will use during the challenge.

STEP 3: DOWNLOAD THE MISSION JOURNAL AND TRAINING TRACKER

Visit the [website](http://www.stem.org.uk/missionx/resources) (www.stem.org.uk/missionx/resources) to download the Mission Journal Student Logbook which students can use throughout the challenge. Also download the Mission X Training Tracker printable classroom poster to put up in your classroom and log points with the printable point badges.

STEP 4: READ ON

Continue reading the rest of this guide for detailed information on how to log your points and complete the mission!

INTRODUCTION TO PHYSICAL ACTIVITIES

These physical activities, illustrated in the Mission resources, utilize the same body parts/systems as astronauts do in training and on missions in space. The activities may be used by individual students or delivered to an audience of students by educators.

Each Mission resource contains a crew member mission, mission briefing, mission assignment, and mission purpose, plus vocabulary and related facts. Safety guidelines are also provided for a successful completion of each mission! The physical activities can be practiced over time – simultaneously or one per week.

Mission Journal: Student Logbook

The Mission X Journal helps students organize their physical activities.

They could:

- set weekly physical activity goals
- record data
- make daily observations about their physical performance.

Encourage students to record observations in their Mission Journals before and after each session. They could add photographs or graphs to show their progress.

How to Get Points

After completing physical activities, be sure to log the points achieved by your team. Use the Mission X Physical Activities Point Collection Sheet and the Mission X Physical Activity Points Rubric to calculate the points achieved for each activity.

You can also log your points on the Mission X Training Tracker printable classroom poster. Use the printable point badges to put on the classroom tracker. This way your team can track their progress together!

Visit the website after completing your activities to submit your final points and help Astro Charlie walk to the Moon.

MISSION X PHYSICAL ACTIVITIES POINT COLLECTION SHEET

Directions: For each activity that your team completes, circle a score of 0, 5, 10, 15, or 20 under each category listed. Then add up the total number of points for each activity in the right-hand column (maximum 40 points for each activity for your team). At the end of the challenge, add up ALL of the values in the right-hand column for your team's total score for physical activities. For details on the rubrics of each score, reference the Mission X Physical Activity Rubric sheet.

Team Name: _____

Mission X Physical Activity Points Rubric








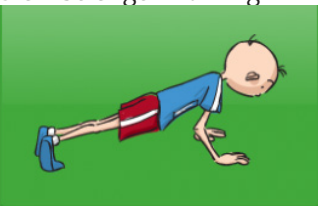


Challenge Team: _____




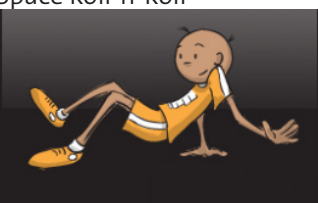



Challenge Physical Activity: _____

Date: _____

Performance indicator	20	15	10	5	0	Total points
Activity Completion	100% of the activity was completed by the team.	75% of the activity was completed by the team.	50% of the activity was completed by the team.	25% of the activity was completed by the team.	0% of the activity was completed by the team.	
Teamwork and Fun	100% of the students enjoyed working together as a team and wanted to do more of this type of activity.	75% of the students enjoyed working together as a team and wanted to do more of this type of activity.	50% of the students enjoyed working together as a team and wanted to do more of this type of activity.	25% of the students enjoyed working together as a team and wanted to do more of this type of activity.	0% of the students enjoyed working together as a team and wanted to do more of this type of activity.	

Total points: _____

	Activity Completion	Teamwork and Fun!	Total Points per Activity (40 max)
Agility Astro-Course 	20 15 10 5 0	20 15 10 5 0	
Explore and Discover 	20 15 10 5 0	20 15 10 5 0	
Base Station Walkback 	20 15 10 5 0	20 15 10 5 0	
Building an Astronaut Core 	20 15 10 5 0	20 15 10 5 0	
Crew Assembly 	20 15 10 5 0	20 15 10 5 0	
Crew Strength Training 	20 15 10 5 0	20 15 10 5 0	
Do a Spacewalk 	20 15 10 5 0	20 15 10 5 0	
The Speed of Light 	20 15 10 5 0	20 15 10 5 0	

	Activity Completion	Teamwork and Fun!	Total Points per Activity (40 max)
Jump for the Moon 	20 15 10 5 0	20 15 10 5 0	
Mission: Control! 	20 15 10 5 0	20 15 10 5 0	
Get on Your Space Cycle! 	20 15 10 5 0	20 15 10 5 0	
Space Roll-n-Roll 	20 15 10 5 0	20 15 10 5 0	
Planet You Go, Gravity You Find 	20 15 10 5 0	20 15 10 5 0	
Let's Climb a Martian Mountain 	20 15 10 5 0	20 15 10 5 0	
Peake Liftoff! 	20 15 10 5 0	20 15 10 5 0	

Total Points for all Physical Activities: _____

INTRODUCTION TO STEM EDUCATIONAL ACTIVITIES

Students participating in the Mission X: Train Like an Astronaut activities will understand more about how physical activity and nutrition affect the human body by conducting a set of hands-on explorations. These science, technology, engineering, and mathematics, or STEM activities, will challenge students to investigate and discover more about physical activity and nutrition.

Mission Journal: Student Logbook

The Mission X Journal helps students organize their educational activities.

They could:

- set weekly physical scientific goals
- record data
- make daily observations about their scientific understanding.

Encourage students to record observations in their Mission Journals before and after each session. They could add photographs or graphs to show their progress.

How to Get Points

After completing educational activities, be sure to log the points achieved by your team. Use the Mission X Educational Activities Point Collection Sheet and the Mission X Educational Activity Points Rubric to calculate the points achieved for each activity.

You can also log your points on the Mission X Training Tracker printable classroom poster. Use the printable point badges to put on the classroom tracker. This way your team can track their progress together!

Visit the website after completing your activities to submit your final points and help Astro Charlie walk to the Moon.

MISSION X EDUCATIONAL ACTIVITIES

POINT COLLECTION SHEET

Directions: For each activity that your team completes, circle a score of 0, 5, 10, 15, or 20 under each category listed. Then add up the total number of points for each activity in the right-hand column (maximum 40 points for each activity for your team). At the end of the challenge, add up ALL of the values in the right-hand column for your team's total score for educational activities. For details on the rubrics of each score, reference the Mission X Educational Activity Rubric sheet.

Team Name: _____

Mission X Educational Activity Points Rubric












Challenge Team: _____

Challenge Activity: _____

Date: _____

Performance indicator	20	15	10	5	0	Total points
Space Understanding	100% of the students understand how this activity relates to health and fitness in space and on Earth. They relate to the information and can explain it back.	75% of the students understand how this activity relates to health and fitness in space and on Earth. They relate to the information and can explain it back.	50% of the students understand how this activity relates to health and fitness in space and on Earth. They relate to the information and can explain it back.	25% of the students understand how this activity relates to health and fitness in space and on Earth. They relate to the information and can explain it back.	0% of the students understand how this activity relates to health and fitness in space and on Earth. They relate to the information and can explain it back.	
Teamwork and Fun	100% of the students enjoyed working together as a team and wanted to do more of this type of activity.	75% of the students enjoyed working together as a team and wanted to do more of this type of activity.	50% of the students enjoyed working together as a team and wanted to do more of this type of activity.	25% of the students enjoyed working together as a team and wanted to do more of this type of activity.	0% of the students enjoyed working together as a team and wanted to do more of this type of activity.	

Total points: _____

	Space Understanding	Teamwork and Fun!	Total Points per Activity (40 max)
Energy of an Astronaut 	20 15 10 5 0	20 15 10 5 0	
Hydration Station 	20 15 10 5 0	20 15 10 5 0	
Living Bones, Strong Bones 	20 15 10 5 0	20 15 10 5 0	
Reduced Gravity, Low Fat 	20 15 10 5 0	20 15 10 5 0	
Taste in Space 	20 15 10 5 0	20 15 10 5 0	
Microbial Activity 1:A Microbial Box 	20 15 10 5 0	20 15 10 5 0	
Microbial Activity 2:What's in your Petri? 	20 15 10 5 0	20 15 10 5 0	
The Speed of Light 	20 15 10 5 0	20 15 10 5 0	
Bionic Hand 	20 15 10 5 0	20 15 10 5 0	

Total Points for all Educational Activities: _____

COMPLETE YOUR MISSION

After completing all of your activities, go to the website and submit your final points in the form.

Look out for the Challenge completion announcement to see how your points helped Astro Charlie walk to the Moon!

Upon submitting your points, you will be given access to the Mission X 2019 downloadable certificate of completion which can be given out to all of your team members.

