

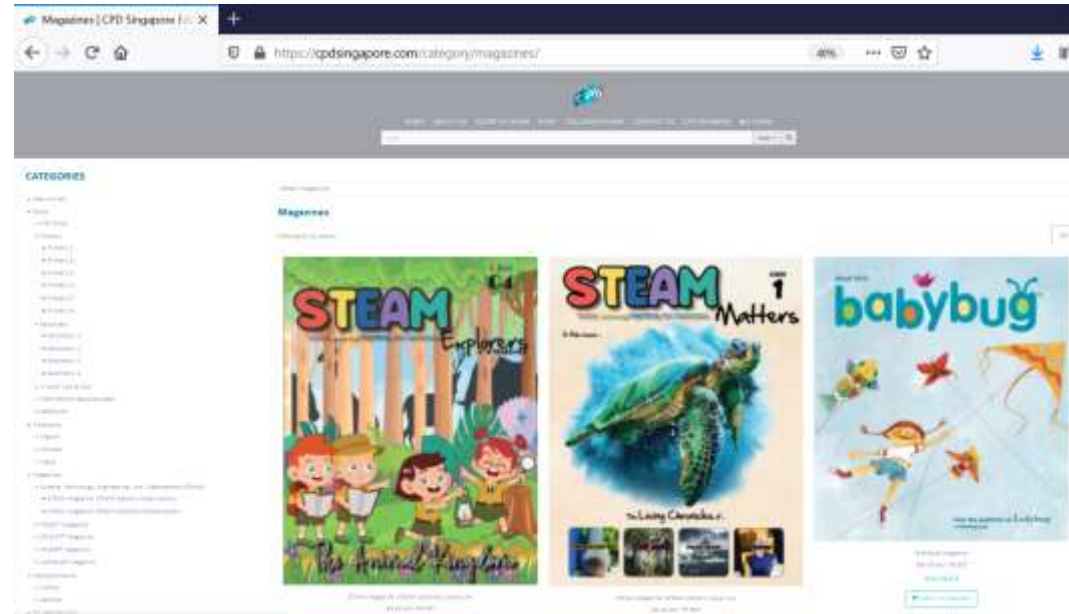
Let's Explore **STEAM** With Dad!

A collaboration between



More About CPD Singapore Education Services

- CPD Singapore Education Services Pte Ltd is a Singapore-based private limited **education consultancy firm**.
- Comprises of a local network of university professors, former National Institute of Education (NIE) lecturers and ex-Ministry of Education (MOE) officers.
- **Published more than 200 assessment books** from pre-school to pre-university levels, and developed various educational resources and comprehensive curriculums.
- Committed to ensuring sustainability educational strategies and practices.



www.cpdsingapore.com

What is STEAM?

- **STEAM is derived from STEM**, which is essentially a more specific curriculum of education in the areas of **science, technology, engineering, and mathematics**. In order to understand STEAM, we first need to understand a little bit about STEM.
- **STEM was introduced in the early 2000s** because it was noticed there was a decline in proficiency of the subjects in the STEM field. STEM includes learning about the science, technology, engineering, and mathematics in completely scientific concepts.
- STEAM, like STEM, teaches science, technology, engineering, and mathematics. However, **STEAM includes the arts as well**. Included in the teaching of the arts is drama, dance, music, media and visual arts, among others. While this curriculum also includes science, technology, engineering and mathematics, **the teaching of STEAM is different in that it looks at the subjects in a more creative and inquiring type of way.**

For Your Information:

- CPD Singapore Education Services Pte Ltd publishes 2 types of STEAM Magazines.

STEAM Explorers:

- STEAM Explorers magazines aim to give young learners a head start in school and life.
- Cognitive and critical thinking skills take centre stage as they are introduced to engaging information interspersed with knowledge and topics which are already hovering within their curious minds.
- STEAM Explorers Magazines enhance children's capabilities and takes learning to a whole new level!
- **Suitable for: Ages 4-8**



STEAM Matters:

- STEAM Matters has been specially designed to stimulate creative and critical thinking skills, expose learners to real-world application, and to instil FUN!
- Each issue is packed with a broad variety of topics, striking images and stories, as well as interactive activities and quizzes!
- **Suitable for: Ages 9 -12**

More about the project:

Let's Explore

STEAM

With Dad!

WHAT IS IT?

- A STEAM project organised by CPD together with the Center For Fathering and the Dads For Life movement.
- For fathers and their children to create a STEAM project based on activities from the magazines and submit their entries as recorded videos (MP4) or Microsoft Powerpoint files.

PURPOSE OF PROJECT

- Create opportunities for bonding between father and child.
- Enhance STEAM knowledge.
- **HAVE FUN while doing the project together!**



PARTICIPATION PROCESS

1. Receive project challenge today.
2. Discuss with your child on how to make it even more exciting / aesthetically-pleasing.
3. Recreate this activity and document your creative journey either through:
 - a) Microsoft Powerpoint file **OR**
 - b) MP4 file
4. Email the file to cpdsespl@gmail.com with your contact details, ie:
 - a) Dad's name, Child's name, Education Level, School.
5. Deadline: 31 Mar 2021, 2359hrs.

JUDGING CRITERIA

PERCENTAGE	CRITERIA
50%	ORIGINALITY Make the project as outstanding/appealing as possible through the creative use of: <ul style="list-style-type: none">• Imagination• Materials• Techniques
30%	FLOW OF CONTENT A clear and sequential documentation from the start to end of the project, detailing the: <ul style="list-style-type: none">• Parent & child discussion about how to go about the project.• Decisions made on how to proceed with the project.• Parent participation and support in the project.
10%	COHERENCE OF EXPLANATION A clear and detailed summary at the end of the project, explaining the decisions undertaken to make the project as outstanding as possible.
10%	TECHNICAL ABILITY The general aesthetics and quality of construction of the project.

SUBMISSION FORMATS

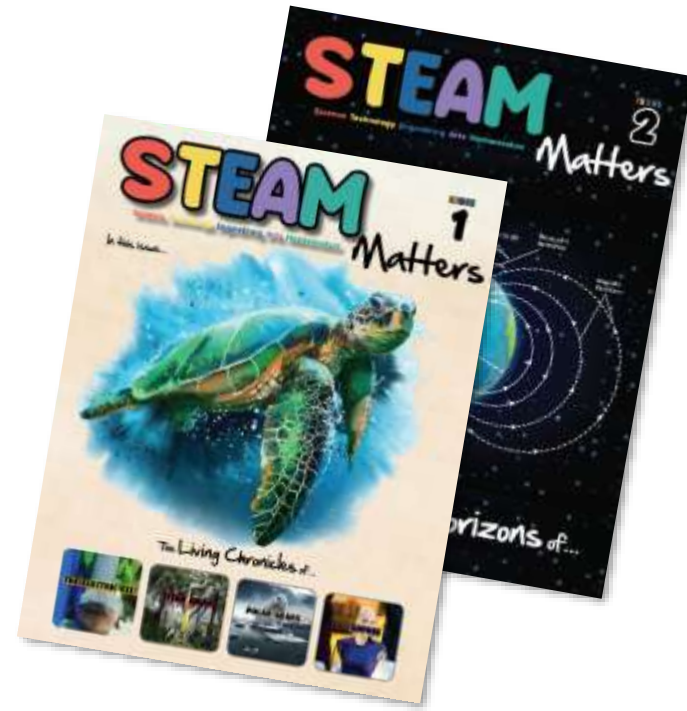
FORMAT	CRITERIA
MICROSOFT POWERPOINT (preferred)	<ul style="list-style-type: none">• Not more than 20 slides• Typewritten explanation for each slide is required.• Please include pictures of the project construction from start to finish.• Please include an Introduction and Summary Slide<ul style="list-style-type: none">• Introduction: How would you and your child make this project outstanding?• Summary: Why do you think the end product is outstanding?• Important note: parent participation must be evident in the project.
MP4 FILE	<ul style="list-style-type: none">• Not more than 10 minutes in duration• Explanation must be verbalised in the MP4 file• Please include an Introduction and Summary<ul style="list-style-type: none">• Introduction: How would you and your child make this project outstanding?• Summary: Why do you think the end product is outstanding?• Important note: parent participation must be evident in the project.

PROJECT RULES & REGULATIONS

- All entries must be submitted by the deadline, 31 Mar 2021 2359hrs.
- Only 1 entry per parent+ child/children team per education level, ie. 1x Lower Primary and 1x Upper Primary.
- All entries must be submitted in accordance to the format and content requested in previous slide.
- CPD reserves the right on all materials that are submitted.
- CPD reserves the right for cancellation.
- CPD reserves the right to upload submitted contest entries to social media sites including and not limited to YouTube, Facebook, Instagram etc.
- Decision on contest is final.

PROJECT PRIZES

- 1st Prize: STEAM Matters Magazine Subscription



- 2nd Prize: STEAM Bicycle

- 3rd Prize: STEAM ALIVE BOX-SET



USEFUL SOURCES FOR INSPIRATION



Search for
“steam project”.



<https://www.pinterest.ca/scholarschoice/steam-projects/>



<https://lemonlimeadventures.com/50-totally-awesome-steam-projects-to-boost-creativity/>

Note:

- ***Above are some sources of STEAM projects for reference only.***
- ***There are many more of such sources available on the Internet.***
- ***CPD and Centre For Fathering are in no way associated with the companies listed above.***

The Project:

Create Your Own

SOLAR SYTEM

With Dad!

DID YOU KNOW THESE FACTS ABOUT THE SOLAR SYSTEM?

- The solar system includes the Sun and all the objects that orbit around it due to its gravity. This includes things such as planets, comets, asteroids, meteoroids and moons.
- The Solar System formed around 4.6 billion years ago.
- There are eight planets in the Solar System. The four inner planets are Mercury, Venus, Earth and Mars while the four outer planets are Jupiter, Saturn, Uranus and Neptune.
- The inner planets (also known as terrestrial planets) are smaller and made mostly of rock and metal.
- The outer planets (also known as gas giants) are much larger and made mostly of hydrogen, helium and other gases.
- As of 2008, there are also five dwarf planets: Pluto, Ceres, Eris, Makemake & Haumea.
- For thousands of years humans were unaware of the Solar System and believed that Earth was at the center of the Universe.
- The Sun contains 99.86 percent of the Solar System's known mass, with Jupiter and Saturn making up most of the rest. The small inner planets which include Mercury, Venus, Earth and Mars make up a very small percentage of the Solar System's mass.

MAKE YOUR VERY OWN SOLAR SYSTEM!

Arts

Mathematics

CREATE A SOLAR SYSTEM

Learning Objectives:

- Be able to draw the solar system.
- Know how to use a math compass to draw circles of different radius.

MATERIALS YOU WILL NEED:

- Cardboards
- Strings
- Colouring materials
- A math compass
- Scissors



Note: These measurements are not proportionate to the actual sizes and distances of the Sun and the planets.

INFORMATION:

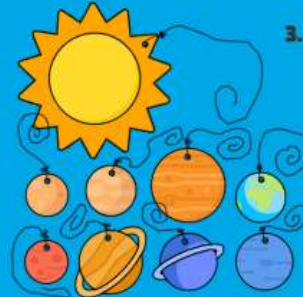
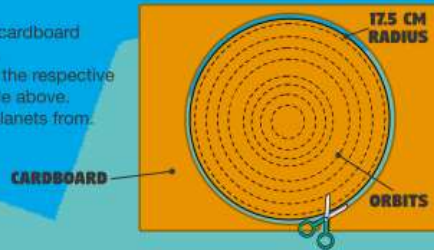
Object	Radius of the Orbit (cm)	Radius of the Object (cm)
Sun	-	15
Mercury	2	2
Venus	3.5	6
Earth	5	6
Mars	7.5	3
Jupiter	10	13
Saturn	12	12
Uranus	15	10
Neptune	17	10

STEPS:

1. Draw a circle of radius 17.5 cm on a cardboard using a math compass and cut it out. Draw on this cardboard, the orbits of the respective planets based on the information table above. This will be the base to hang all the planets from.



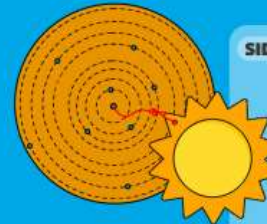
2. Draw out on another cardboard, the Sun and the planets of different radius based the table above. Colour them and cut them out. Remember to draw in the rings for Saturn and Uranus! To have a nicer looking final product, colour both sides of the Sun and planets.



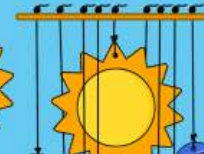
3. Poke a hole through the Sun and each planet using the sharp end of the math compass, and tie a string through each of them.

4. Poke a hole through the middle of the base cardboard and thread the string of the Sun through it.

SIDE VIEW:



SIDE VIEW:



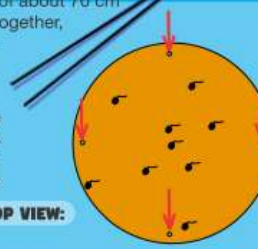
Tie a big knot so that the string does not fall through the hole. Note: Tie the Sun about 3 cm away from the base cardboard.

5. Poke a hole on each of the orbits to hang the respective planets from the base cardboard. Randomise the location of the holes and the lengths of the planets' strings so that they are not cluttered together.

6. To create a handle to hang the whole solar system, prepare 2 strings of about 70 cm each. Place the 2 strings together, fold them into half and tie a knot, leaving a loop.

Poke 4 holes near the edge of the base cardboard as shown, then thread each end of the strings in, and tie knots to secure.

TOP VIEW:



FINAL PRODUCT:



SOURCE:

- STEAM MATTERS Issue 04, Pages 46 - 47
- Please refer to



<https://cpdsingapore.com/dads-for-life/>

Q & A