

The Galactic Wonders

How can we as 'Space Explorers' make people in Pakistan fall in love with the wonders of space?

- 4 Blue, TNS Beaconhouse Gulberg



PROJECT IDEA

Students explored different elements of space that intrigued them. They learned to verify their knowledge and research work with different resources for authenticity. Then they educated their peers about their updated knowledge by interactive activities, trivias, and creating content. Finally, they created content to educate other audience (especially children) to start a small mission of getting Pakistan more involved in space exploration.

PBL FACILITATORS



MS AYESHA INAM & MS MEHER

Student Products:

- Students' "Did you know?" Videos,
- Artwork,
- Informative Writing Pieces,
- Rap songs,
- DIY rocket models.

Skills:

- Communication, Collaboration,
Research, Information Literacy,
Critical Thinking, Scientific Inquiry,
Creativity, Thinking Skills, Public
Speaking, Self Management

Solar Systems, Scientific Investigation, The Engineering Design Process

- Exploring ways in which scientists gather evidence for their ideas and develop explanations
- Acknowledging and using information from various sources including SMEs, books, and internet to guide the formulation of investigable questions
- Choosing questions to investigate from a list of possibilities
- Working in groups, with teacher guidance, to plan ways to investigate questions
- Recognising the elements of a fair test and using these when planning the steps and processes of an investigation
- Comparing, in small groups, proposed reasons for findings and explaining their reasoning
- Communicating with other students carrying out similar investigations to share experiences and improve investigation skills
- Using simple explanations and arguments, reports or graphical representations to communicate ideas to other students

English Literacy Strands:

Informational and Fiction Narrative Writing

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- Presentation of Knowledge and Ideas
- Integration of Knowledge and Ideas
- Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- Conduct short research projects that build knowledge through investigation of different aspects of a topic
- Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 4 Reading standards to literature b. Apply grade 4 Reading standards to informational texts



Our Learning Journey

Here is how our journey unfolded....



WEEKLY PLANNER

Get organized



WEEK 1

- Provocations



WEEK 2

- Entry Event, DQ, Need to Knows



WEEK 3

- Elements of our Solar System
- Reaching out to other children



WEEK 4

- Creating diverse content on Solar System
- Connecting with SMEs



WEEK 5

- Understand and creating Content on Secrets of Space



WEEK 6

- Presenting their information and products

*TOGETHER
FINDING OUR WAY*



Week 2: Discussion and voting on Project Idea and D.Q

Class discussions on what should be our project idea and driving question. How can we make our learning authentic and make a real world difference, A post was generated on Google Classroom where students had to post their ideas for brainstorming.

D.Q: How can we as space explorers convince people Pakistan to love the wonders of Space?

The Galactic Wonders
4 Blue - Exploring the Space

The Space Project

File Edit View Insert Format Slide Arrange Tools Add-ons Help LAST EDIT: 2023/02/28 1:50

Background Layout Theme Transition

- Video for our Gal Project
- Videos - shared on Instagram
- Blog
- 3-D Models/STEM activities
- (asteroids, rockets)
- Songs about Space
- Posters
- Podcasts/documentary on Space
- Digital Newsletter
- Virtual Museum
- Virtual session with a space scientist

Click to add speaker notes

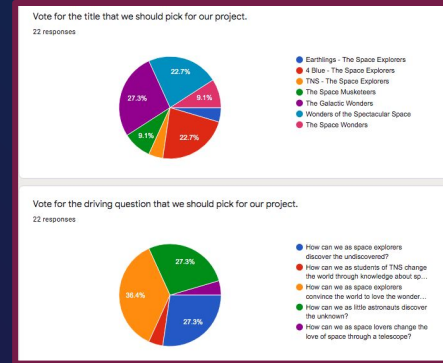
A discussion started where the students mentioned why is it only U.S, Russia and India who are working on space explorations. We need to have Pakistan actively involved in Space Exploration too.



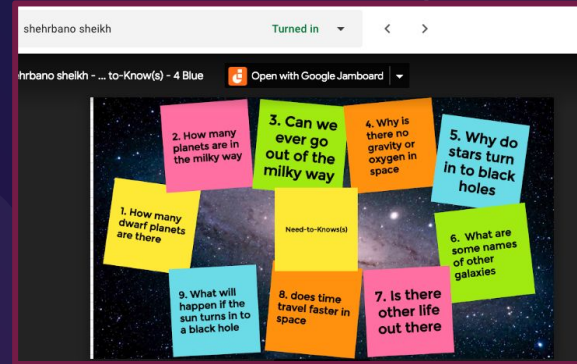
Week 2: Finalizing Project Title and D.Q

A Google Form was created by the teachers where the most relevant ideas from the students were posted. Students voted on the Project Title and Driving Question that fits best with what they want to do during the project. Discussion on the end products took place. Students were requested to think about the talents they have and how can they use their talents to first gain knowledge about Space. And later using their various talents to create content to have people in Pakistan more intrigued about space sciences. Teachers collated the students responses on in a document in Google Slides.

Link: Students Project Document



Students voted for the Driving Question and Project Title using Google Forms.



A Google Jamboard with sticky notes was assigned to each student. They typed in their list of Need To Know questions, which were later categorized and noted down in 3 groups. Link of the Need to Knows was shared with the class on Google Classroom.



Week 2: Entry Event

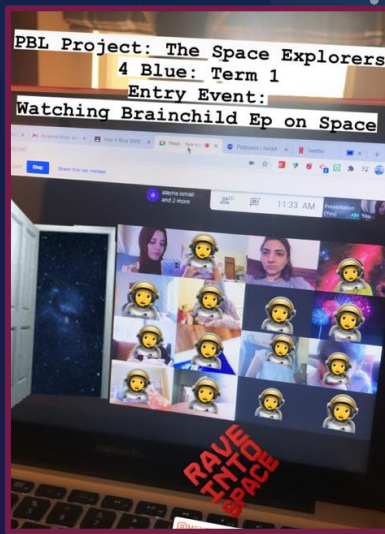


We had a PJ Party/Movie Date, where the teachers and students brought their snacks and watched an episode on Space by Brainchild on Netflix during an online lesson.

A post was created on Google Classroom as **"100 Comments Challenge"**. Students were encouraged to post 4 comments each on the post to tell their teachers and peers what they learnt from the movie.

Link to the post and students responses:

<https://classroom.google.com/c/MTQxODUwOTAxNjU3/p/MjA2NzAxNTAwNjcX/details>



- selina abbas** Nov 13
How can we as students of Tns change the world through space
- selina abbas** Nov 13
The Tns space explorers
- selina abbas** Nov 13
What I learned is that how far any planet is from a sun it is going to be cold, any planet that is near a star is going to be hot and we are in the middle so we have hot and cold temperatures
- selina abbas** Nov 13
I also learned there are over 40 billion stars in our galaxies and that when ever you squirt a juice in space it is going to become a tiny drop/ball
- misha omer** Nov 13
I learned that it takes 1 hour to drive to space
- misha omer** Nov 13
I also learned that if you lose your space helmet in space and hold your breath your lungs will explode



Ayesha Inam - 68326/TCNR/TNSGV
Nov 13

The 100 Comments Challenge

Hey Earthlings!

So here's your challenge of taking this post to a 100 comments. Every student is only allowed 4 comments. So encourage your friends to take their part in the challenge. You will only be able to complete the challenge if everyone writes their reflections. :)

Ms. Meher and I, of course are on your side, and we will help also.

Here's what you have to do:

- In one comment, suggest what driving question could we have for this project. (Remember, our project is on space and we want to make a real world difference to make our project authentic.)
- In another comment, suggest a title for our project. (e.g. "The Space Explorers", or anything cooler. A title can have 3-5 words)
- In two comments write your reflections on what cool stuff did you learn from the Brainchild's episode on Space today.

Best of luck.

We know you'll all do a great job!

It will explode. It takes oxygen in space which



Week 2: Identify Elements in Solar Systems

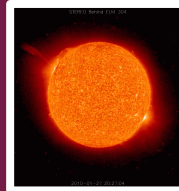
Since most of the students' questions listed in the Need-to-know lists were about our planets and solar systems.

Google Slides lesson on Solar System was shared with the students as a viewable file.

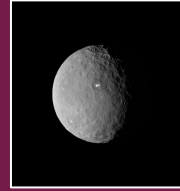
- They read informational text, watched informational videos, comprehended and discuss the elements in our solar system.

[Click here to view the lesson](#)

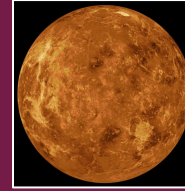
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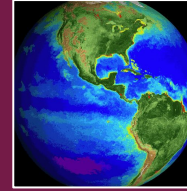
Sun



Mercury



Venus



Earth



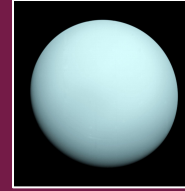
Mars



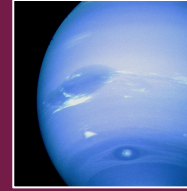
Jupiter



Saturn



Uranus



Neptune



Pluto

A slide from our lesson



Week 3: Create content on Solar System

Lesson 1:

Students will be shown virtual tours of different planets from the website given below:

<https://nineplanets.org/>

- Students were requested to create videos on their assigned space object. They created videos giving hints to the viewers about their space objects.

Students created the videos and posted on Flipgrid.

Flipgrid Link: <https://flipgrid.com/631c291b>





Week 3: Analyse Information on Solar Systems

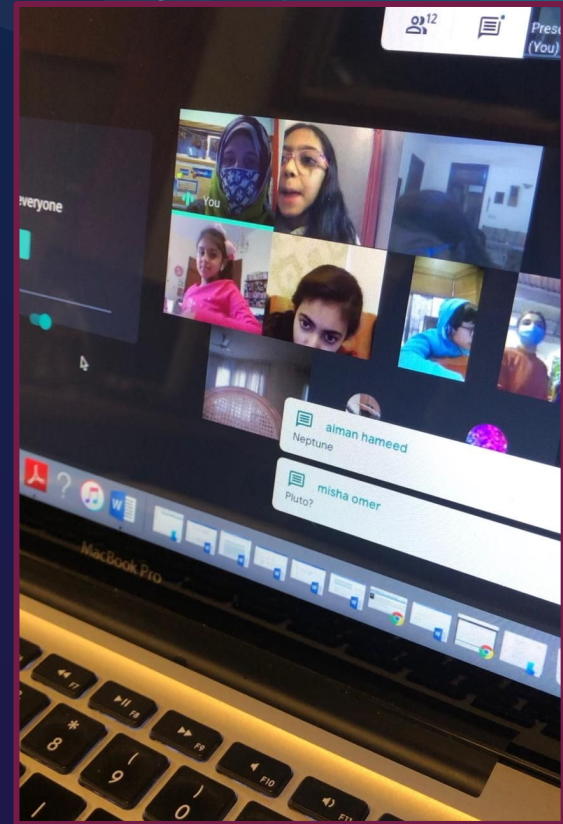
Formative Assessment:

Guess my planet challenge!

GAME

Students were shown Flipgrid videos of their peers. All students went through the given hints to try to guess which space object they were talking about in the video.

Students were assessed on their understanding of the planets and guessing. They were also give their feedback on the videos.





Week 4: Shout Out Videos to invite children for a Live Q&A Session with a Pakistani Space Scientist

Shout out videos

GAME

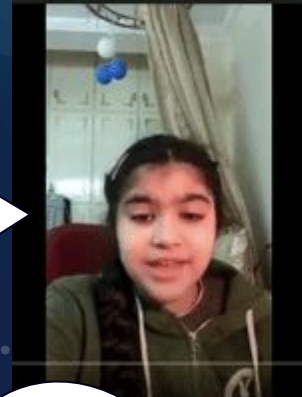
The teachers arranged a live Q&A session with Mr Yarjan Abdul Samad, who is a Pakistani space scientist working with the university of Cambridge currently. Students made Shout Out Videos to invite children from all over Pakistan to be a part of their live sessions. They analysed what information will attract them and included those facts in their videos.

Google Form Quiz on Solar System

As a formative assessment, students also took a quiz using Google Forms to help us all assess our teaching and learning.



Did you know that sun appears yellow to us because of Earth's atmosphere?

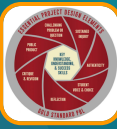


Did you know that Saturn's moon Titan is the only moon in our solar system that has an atmosphere?



Did you know that sun is so big that it can fit in more than a million Earths?

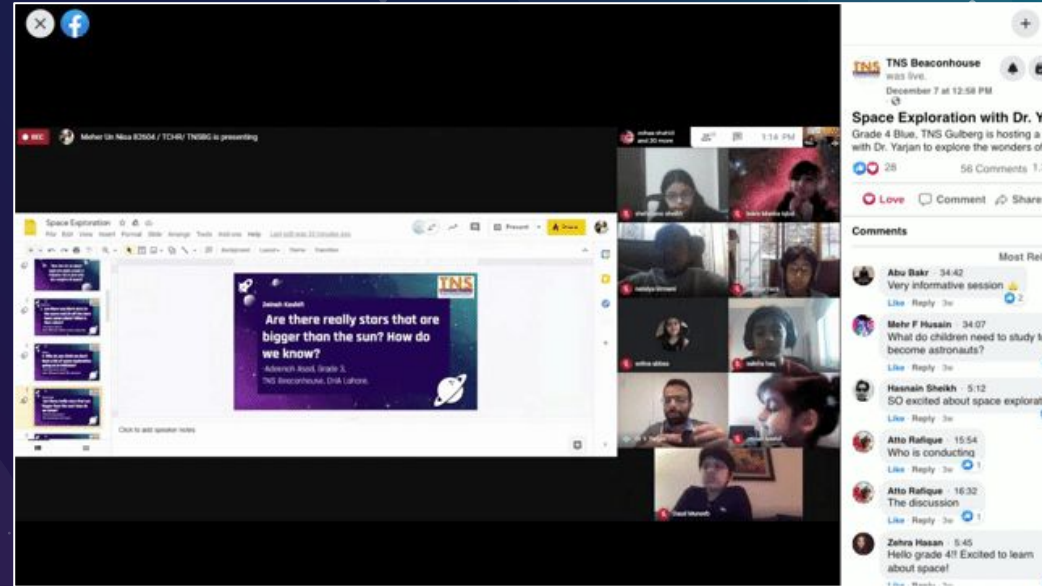




Week 4:

Live Q&A Session with our Subject Matter Expert, Mr. Yarjan.

We had two Q&A sessions with Mr Yarjan, one where students asked him well-thought out questions and very patiently he replied. They were so fascinated that they wanted to have another session where they invited children from all over the Pakistan to ask questions via their shout out videos circulated on our school's social media handles.. Interestingly they received questions from Pakistan, Ireland, Australia and even UK. They were super excited for this session.



Link to the session:

<https://www.facebook.com/tnsbeaconhouse/videos/793350734582313>

Week 5:

Dark secrets of the universe, Content Creation

In this whole week, we gathered all the need to knows by the students and created a Netflix Style assignment for them. Resources were provided to the students in the form of videos, weblinks and informative text divided into 12 topics of their interests.



Students were given various choices to select the content they were interested in, and use that to create their own informative pieces, rap songs, presentations, videos and artwork. They were also required to create different kinds of rockets following "The Design Process". Rubrics and assessment criterias were shared with the students as they worked on creating content, gaining skills related to the Engineering Design Process, research, informative writing and most importantly, the 4 C's (Communication, critical thinking, creativity and critical thinking).

Week 6:

Preparing for our project presentation

Our students chose what to present, who to present and how they were going to go about their presentation. We had several discussions before the final event, and students made and expressed their choices using a Padlet Wall.

padlet

Ayesha Inam - 68326/TCHR/TNSGV + 26 • 1m

Project Presentation Ideas

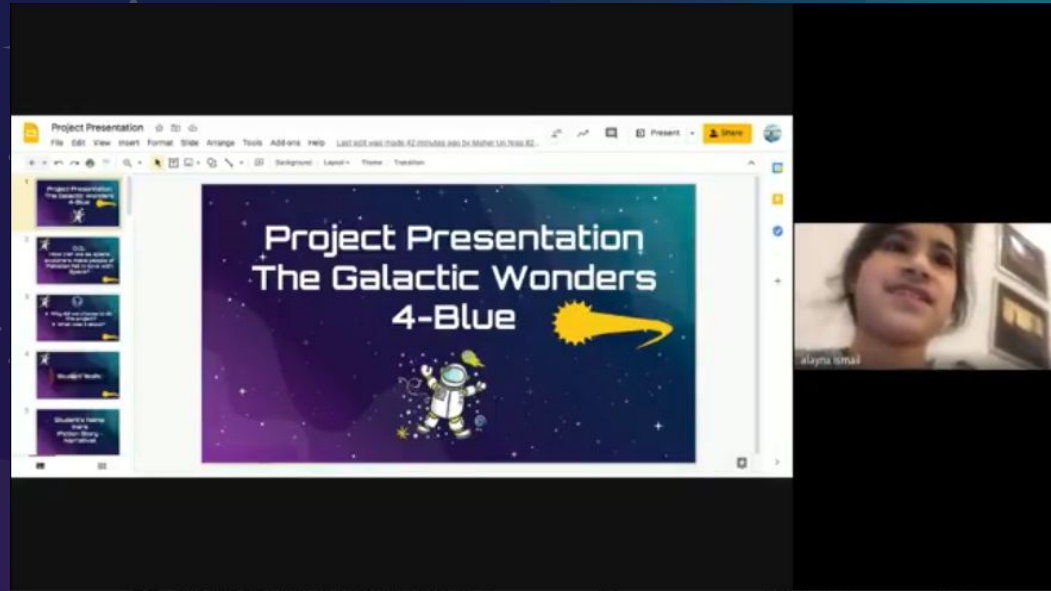
As per our class discussion, please contribute to each column in three ways: 1. Which question do you want to ask the parents for trivia? 2. learned during the project. 3. Choose your product or work sample that you made your best efforts on.

Solar System Trivia for Parents	Mind Blowing- Did You Know Facts!	Which Work Sample Are You Choosing
<p>+</p> <p>Essa</p> <p>What planet is the furthest planet from the sun (Neptune)</p> <p>1 Neptune 2 Uranus 3 Jupiter</p> <p>Add comment</p> <p>Musa fahad</p> <p>These are the planets in order...</p>	<p>+</p> <p>Inara</p> <p>The sun's gravitational pull is so strong that it holds all the planets in their place. Without the sun, the planets would be whizzing around in space. The sun keeps each planet in its place and each planet in its own orbit!</p> <p>Add comment</p>	<p>+</p> <p>Misha Omer</p> <p>Definitely my fictional story :)</p> <p>Add comment</p> <p>Essa</p> <p>My Flipgrid video</p> <p>Add comment</p>

ADD COLUMN

Week 6: Our Online Culminating Event

Finally, the students and teachers invited parents and school administration to an online meeting, where the students showed their favourite products and the results of their investigations. They received feedback and celebrated their success.



Asteroids

Astronomical

Dwarf planets

Terrestrial

Craters

OUT OF THIS WORLD
WORDS

Telescope

Celestial

Meteorites

Comets

Universe



THANKS!

ANY QUESTIONS?

You can find me at ayesha.inam@tns.edu.pk