

8th Planetary Defense Conference 2023, 03-07 April 23
UNOOSA/IAA, Vienna, Austria
Day 02 : Session : Disaster and Impact Responses

Digital Modeling for Planetary Defence in Non Formal Education

by

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Summary

Digital Modeling for Planetary Defence in Non Formal

Creative response as a disaster risk reduction enabling

Vision and Agenda

Since ages humanity has lived through natural and technological disasters

Non Formal Education modes can reinforce planetary defence

Design: Way Forward

Four Target groups

01 : Fifth to ninth Standard students with a handhold

02 : 11th and 12th Standard Students with Physics and Mathematics

03: Any Branch of study degree level

04 : No restriction in age, socio economic and cultura status

Methodology:

TEN WEEKS One Hour a Week with a Background material for a poem, painting or a slogan

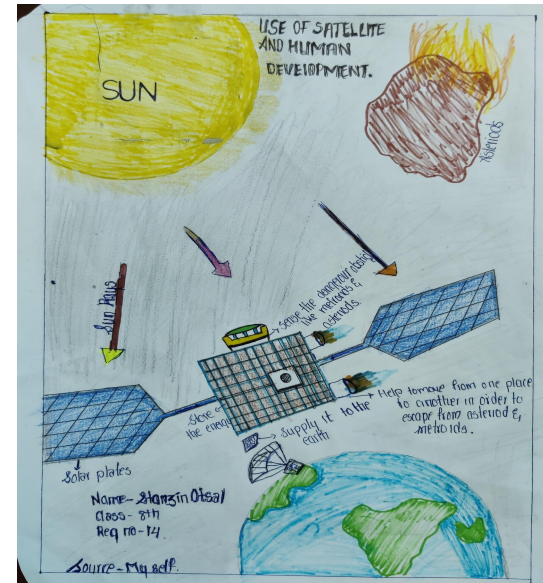
Basis : UNESCO/UNEP/IEEP,1977 environmental education objectives

Science and Culture Hinge each other, UNESCO, 1989

Results :

Mindfulness creative responses on community response for planetary defence

Space Eco Literacy Vision for Planetary Defence at Community Level



NASA's DART Mission :
26-Sept-2022 — After 10 months flying in space, NASA's Double Asteroid Redirection Test (DART) – the world's first planetary defense technology ...
<https://www.nasa.gov/>

A 8th Standard Student Stanzin Otsal , Mahabodhi Carla School Mysuru, India in a SEL SW : Space Ecoliteracy campaign during 2020 Lockdown depict the space quest of mankind using technology.

Planetary Threats are Real and Need Disaster Risk Reduction : Evidences



- The Chelyabinsk super-bolide on 15 February 2013 serves as an explicit reminder that even relatively small asteroids (~20 metres across) can penetrate the atmosphere.
- 2022, two previously unknown asteroids were observed only hours before they entered the Earth's atmosphere – one over the ocean near Iceland, the other over Canada.
- Both were small enough to disintegrate in the Earth's atmosphere and not result in any damage while these asteroid impacts provided the unique and real-time opportunity to test the systems currently in place to track a celestial object's trajectory on a collision course with our planet, they also served as a further reminder that a NEO impact from an unknown asteroid could occur at any time

Source : Planetary Defense Decisionmaker Guide
What Leaders Around the World Should Know—and What
They Can Do—If an Asteroid or Comet Threatens to Hit
Earth. **DRAFT ONLY**
+ Jan Osburg, UNOOSA , 8 PDC, 2023

Disasters and Planetary threats within and beyond :

PDC and a Young Space Quest Volunteer

Planetary Defense entails detecting, monitoring, understanding, and mitigating near-Earth objects, also known as NEOs. They are small objects in solar system like **asteroids** and comets that come close to Earth. Whether or not an object is classified as a NEO depends on its orbit, size, and composition.

Stanzin Otsal,
8th Std Student
Mahabodhi Carla School,
Mysore from Ladakh.,
India



Venerable Dr. Acharya Buddharakkhita
memorial Non formal Space Situational
Awareness Campaign 2021, 10 week free
Virtual . Week #04 response on PDC and
Disaster Risk Reduction

EM-DAT : The International Disaster Database Week 12-2023: March 20 - March 26

Natural disasters:

- 2023-0156 Earthquake; Afghanistan and Pakistan
- 2023-0157 **Floods and landslides**; north-eastern Brazil
- 2023-0158 **Severe weather**; California, USA
- 2023-0159 **Flash floods**; Balochistan province, Pakistan
- 2023-0167 **Hail storm**; Jiangxi, China
- 2023-0168 **Floods**; Marib City and Marib al Wadi, Yemen
- 2023-0169 Earthquake; West Azerbaijan Province, Iran (Islam Rep)
- 2023-0170 **Severe weather**; Sumatra and the Java Islands, Indonesia
- 2023-0172 **Flash floods**; Gedo region, Somalia
- 2023-0173 **Floods**; Khyber Pakhtunkhwa Province, Pakistan
- 2023-0174 **Floods**; Greater Nairobi Metropolitan area, Kenya
- 2023-0175 **Floods**; Santa Cruz Department, Bolivia
- 2023-0176 **Tornadoes**; Mississippi, US
- 2023-0179 **Floods and landslides**; Acre and Amazonas states; Brazil
- 2023-0180 **Floods**; Eastern Cape province, South Africa
- 2023-0181 Wildfires; Castellon and Teruel provinces, Spain

Technological disasters:

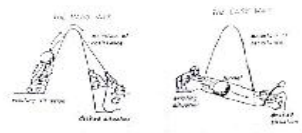
- 2023-0185 Shipwreck with migrants; near Sfax, Tunisia
 - 2023-0186 Bus accident; Udubo, Nigeria
- <https://www.emdat.be/>

Planetary Pandemic Disaster : Living Through with Omnipotent Science of Life Styles

COMMUNITY EMPOWERMENT

- Action : 01 : Provide Communities and individuals with access to resources and an equitable share in managing them.
- Action : 02 : Improve exchange of information, skills, and technologies
- Action : 03 : Enhance participation in conservation and development
- Action : 04 : Develop more effective local governments.
- Action : 05 : Care for the local environment in every community
- Action : 06 : Provide financial and technical support to community environmental action.

(Source: Caring for Earth : IUCN/ UNEP/UNESCO, 1991)



Use a Tunnel Effect for an easy way

ECO SENSE IS COST FREE & OUR CULTURAL HERITAGE

?

Concept and Design

Prof. V. Jagannatha
Formerly Scientist/Engineer ISRO
With
Prof. Shobha Jagannatha, Botany
Er. Sahana.J. Fitness Trainer, Zumba
Dr. Spandana.J, MS, Surgery Student
Ar. Sadhana. J, PhD Student

PSF

A unit of Karnataka Vigyaan Parishat, Mysuru

Translated by.....

Network

Earth day Week April 20

<https://www.wedonthavetime.org/event/earthdayweek>

COVID 19 District Emergency Control Room

107, 0821-2423800

Central Hel Line

011-23978046/23314444

Ministry of Health & Family Welfare, Gol

Helpline

Frequently Asked Questions

1075

011-23978046

ncov2019@gmail.com

www.mohfw.gov.in

Information

World Health Organisation with Online Status, Personal

Protection, Education and Training

[https://www.who.int/emergencies/diseases/novel-](https://www.who.int/emergencies/diseases/novel-coronavirus-2019)

coronavirus-2019

How soap kills the coronavirus : Science

<https://youtu.be/-LKVUarhtvE>

Action

Prevention by simple behavioural changes

[https://www.youtube.com/watch?v=1APwq1df6Mw&action=](https://www.youtube.com/watch?v=1APwq1df6Mw&action=here)

here

Gol

Home Quarantine Guidelines

[https://www.ndtv.com/india-news/coronavirus-outbreak-](https://www.ndtv.com/india-news/coronavirus-outbreak-health-ministry-issues-guidelines-for-home-quarantine-as-coronavirus-spreads-2193905)

health-ministry-issues-guidelines-for-home-quarantine-as-

coronavirus-spreads-2193905



Ibn Sina was a Persian polymath who is regarded as one of the most significant physicians, astronomers, thinkers and writers of the Islamic Golden Age, and the father of early modern medicine, (980-1037)

Earth Day April 22, 2020 : Climate Action

COVID-19 RESILIENCE IN OUR HANDS



Resort to Soap Wash & Prevent Covid-19

...Because the soap molecules are so similar to the ones making up the outer layer of the virus, the molecules in the lipid bilayer are as strongly attracted to soap molecules as they are to each other.

This disrupts the neatly-ordered shell around the Covid-19 virus, dissolving it in the running water and killing the virus.

--- Sara Rigby, UK, 13th March, 2020 at 08:00 ,
Science Focus, The Home of BBC Science Focus Magazine

Upasaki Prof V M Parvathamma
Memorial Space Eco Literacy and sky watch Lab
People Science Forum
(A unit of KRVP)

"Panya Sadana" 173, 3rd A Main D Block, Vijayanagar 3rd
Stage

Mysuru 570030, India

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Any Disaster Manmade or Natural is a Challenge to our
Dhamma, Karuna and Compassion. You are your light.

+ The Buddha

Page 01 of 02

Flier on Pandemics brought out in Lockdown 2020; Copies in English, French, Spanish, German, Japanese, Sanskrit, Hindi, Urdu, Kannada, Telugu
Confidence Building at Community Levels is Enabling for Disaster Risk Reduction
Used as a Course Material in SEL PDC 23

Planetary Pandemic Disaster : Living Through with Omnipotent Science of Life Styles, Con'td

Public Health endangering Pandemic Viral, Bacteria and Chemical, Nuclear and Bio Warfare Episodes, Impacts and Lessons Learnt :

Sl No	Episode	Year/Location	Source/Symptoms	Impact Global, India,	Diagnosis/Preventive- Control measures/Lessons learnt
01	Covid-19 Corona Virus	Nov 2019/Wuhan, China	BAT, Wet Market Unhygienic Cold, Fever, Sore throat, Running nose Respiratory difficulties, dry Cough, Infectious.	Wuhan city, in 45 days infected 45,638 killed 1018 in 27 countries, WHO declared Pandemic.	Infection through contact. Lock down for 3 weeks, Individual social isolation enforced, preparedness and health care reinforced, disaster status announced. Livelihood schemes announced. Indian Traditional Food habits having good immunity realised Swab from throat/Rest, Pain reliever, fluids, anti-viral medicines, IV fluids. Public Health Architecture totally a lowered priority all over the world. No preparedness for Pandemic.
02	H1N1 Influenza A Virus Swine Flu	April 2009/ Mexico and USA	Virus that infect the respiratory tracks of Pigs cause Swine Flu/ Barking Cough, respiratory illness, in human since 1977. First global flu Pandemic	4000 deaths in USA, 2009-10.	Indian Traditional Food habits having good immunity realised Swab from throat/Rest, Pain reliever, fluids, anti-viral medicines, IV fluids. Public Health Architecture totally a lowered priority all over the world. No preparedness for Pandemic.
03	SARS Severe Acute Respiratory Syndrome	Nov 2002/Yunnan China	Intermediary of civets to cave dwelling horseshoe bats in Yunnan province, Pneumonia like.	Travelled across 24 countries 800 people killed and infected over 8000 in 27 countries. No known transmission has occurred anywhere in the world since 2004.	SARS showed how quickly infection can spread in a highly mobile and interconnected world. Surgical masks will provide barrier protection against large droplets that are considered to be the primary route of SARS.
04	Spanish Flu/ Deadly plague	1918/Spain Pandemic	H1N1 Virus with genes of avian origin. It spread worldwide during 1918-19. It was identified in US military personnel in Spring 1918.	500 million people or one third of the world's population got infected and deaths estimated to be at least 50 million world wide	1918 H1N1 virus has been synthesized. With no vaccination to protect against influenza infection and no antibiotics to treat secondary bacterial infections, control efforts worldwide were limited to non-pharmaceutical interventions such as isolation, quarantine, good personal hygiene, use of disinfectants, and limited gatherings.
05	Plague Infectious fever	Oct 1347/12 ships from the Black Sea docked at the Sicilian port of Messina, Europe	Bacteria-Yersinia Testes/Bitten by infected Rodent Flea. Cause for 14 C century Black Death one-third of Europe's population died.	100 M deaths in Asia/Africa/ Europe, 6 M deaths in India.	1994 plague in India was an outbreak of bubonic and pneumonic plague in south-central and western India from 26 August to 18 October 1994. 693 suspected cases and 56 deaths were reported from the five affected Indian states. Isolation Camps.
06	Malaria /origin primates	Prehistory, to 21 Century.	Humans may have originally caught Plasmodium falciparum from Gorillas.	200M Patients per year, kills 600,000 per year, Endemic in 100 countries.	1000s of years, traditional herbal remedies. The first effective treatment for malaria bark of the cinchona tree, quinine. Early twentieth century, mosquito control measures such as widespread use of the insecticide DDT, Biological control.
07	Bio-Warfare Bacteria, Viruses, Insect and Fungi	1133, 1346 1493, 1763, 1863/ Italy, Japan, Spain, UK,USA	Military action by Countries/Water wells poisoned in China by Japanese, Wine with blood of Leprosy patients in Spain by Italy, Blankets from Small Pox Patients by UK in Native Americans..	Infection technology using abused in Wars against enemies. Eliminated soldiers in Wars in America, Europe and Asia.	Guidance for Protecting Building Environments from Airborne Chemical, Biological, or Radiological Attacks www.cdc.gov/niosh
08	Nuclear War and Testing	Little Boy, Hiroshima, Japan 6 Aug.1945 Fat Man, Nagasaki, Japan 9 Aug. 1945	Military action by USA on Japan/ Nuclear Technology, 80,000 Killed 10000s maimed in 3 Sq Km area. And 40,000 killed.	2000 Nuclear explosions made on Land, in Ocean and in Air. 9 countries own 14,300, it was 70,300 in 1986.	Anti-Nuclear movement : 1970-80s : 30,000 women activists in 60 cities in the USA. 1982 One Million people marched in New York city.

Source : On Line WHO, global, national references.

"Hand washing is one of the most effective ways to prevent the spread of disease "
+ Dr. Ignaz Schlemiels, Hungarian Physician, Father of infection Control, 1847

Community Living through ages through Natural and Technological Disasters are deluged in Human history though all civilizations.

UNCED Rio Earth Summit, 1992 Take Home for Planetary Defence
Enabling communities to care for their own environments

ACTION POINTS

- **Action : 01 : Provide Communities and individuals with access to resources and an equitable share in managing them.**
- **Action : 02 : Improve exchange of information, skills, and technologies.**
- **Action : 03 : Enhance participation in conservation and development.**
- **Action : 04 : Develop more effective local governments.**
- **Action : 05 : Care for the local environment in every community.**
- **Action : 06 : Provide financial and technical support to community environmental action.**

**Caring for the Earth: A Strategy for Sustainable Living
(IUCN,UNEP/WWF, 1991)**

Schedule

Ten Week One Hour A Week Virtual SEL PDC23

Week # Date	Topic	Content	Literature Sources for Weekly notes	IEEP Objectives ⁷
# 01: Apr 10-15	IAA ¹ : NASA ² : ESA ³	Near Earth Objects : NEO ⁴	ISU ⁵ : CASANDRA ⁶	Aw7 ^a : A7 ^b : K7 ^c :
#02 April 17-22	8PDC UNOOSA ⁸	Session 10 : Public Education	https://www.unoosa.org/oosa/en/ourwork/topics/neos/2023/IAAPDC/index.html	Aw7 ^a : A7 ^b : K7 ^c
#03 April 24-29	EM-DAT	Natural and Technological Disasters	https://www.emdat.be/	Aw7 ^a : A7 ^b : K7 ^c
Four	APELL UNEP	Community Emergency Preparedness Plan	https://www.unep.org/resources/report/overview-apell-programme	A w 7 a : A 7 b : K7c:P7e
Fifth	National Disaster Management Act 2005 India	Pre and Post Disaster Management	https://ndma.gov.in/Governance/Guidelines	A w 7 a : A 7 b : K7c:P7e
Six	Best Practices in Disaster Management	Disaster Risk Reduction	https://tnsdma.tn.gov.in/app/webroot/img/document/library/42-Good-Practices.pdf	A w 7 a : A 7 b : K7c:P7e
Seven	UNISDR : International Strategy for Disaster Reduction	Good Practices and lessons learned 2007	https://www.unisdr.org/2007/campaign/wdrc-2006-2007.htm	A w 7 a : A 7 b : K7c:P7e
Eight	Planetary Defence and Community Enabling	Enabling Communities to Care for their well being,	https://portals.iucn.org/library/efiles/documents/cfe-003.pdf	A w 7 a : A 7 b : K7c:P7e
Nine	WHO: Public Health Architecture as Planetary Defence	Pandemic Prevention	https://www.who.int/india/news/detail/22-05-2020-faith-based-organizations-across-india-step-up-the-fight-against-covid19	A w 7 a : A 7 b : K7c:P7e
Tenth	Space Education Outreach : Digital and Folk in local dialect	Creative art, literary and cultural, People Science Movement in India	https://en.wikipedia.org/wiki/Science_outreach_2012/11/bharat-jangyan-vigyan-jatha.html	A w 7 a : A 7 b : K7c:P7e

Note : 1: IAA: International Academy of Astronautics www.iaaweb.org : 2: NASA : <https://www.nasa.gov/>: 3: ESA : <https://www.esa.int/> :4: NEO : Near Earth Objects :5/6: ISU/CASANDRA : www.isunet.edu: A Strategy to protect our planet from Near Earth Objects: ISU SSP 2005 : :7: UNESCO IEEP 1977 : <https://wedocs.unep.org/bitstream/handle/20.500.11822/29013/UNESCO.pdf?sequence=1&isAllowed=y> : Objectives:7a : Aw : Awareness : 7b: A: Attitude : 7c: K: Knowledge : 7d: Skill : 7e: Participation : 8: 8PDC UNOOSA: 8th Planetary Defence Conference 2023: <https://www.unoosa.org/oosa/en/ourwork/topics/neos/index.html> :

Selected/References/Citations

- Climate Action Network , CAN : <https://climatenetwork.org/>
- Earth day Network : www.wedonthavetime.org
- Jean-Michel Contant, Celebrating 50 Years of Excellence, International Academy of Astronautics, www.iaaweb.org
- EM-DAT, The International Disaster Database, Centre for Research on the Epidemiology of Disasters-CREDA : <https://emdat.be/>
- <https://un-spider.org/news-and-events/events/united-nations-international-conference-space-based-technologies-disaster-0>
- UNEP/UNESCO/IEEP, Tbilisi Conference 1977
https://en.wikipedia.org/wiki/Environmental_education
- Caring for the Earth: A Strategy for Sustainable Living (IUCN,UNEP/WWF, 1991)
Caring for the Earth: A Strategy for Sustainable Living IUCN,UNEP/WWF, 1991

Weekly Links and Web Sources for notes to Students and handhold for one hour a week assignment for creative responses

Useful Home Pages and Notes
https://en.wikipedia.org/wiki/Science_outreach 2012/11/bharat-jan-gyan-vigyan-jatha.html http://www.oocities.org/y_s_a_2004/about.html#:~:text=Year%20of%20Scientific%20Awareness%20-%202004%20The%20idea,sci
Practice of Ten Paramas and COSMOS www.mahabodhi.info , https://en.wikipedia.org/wiki/Carl_Sag
www.oeliusob.com Space Techology and Social Applications a Book on Indian Space programme in English and Local Dilaect Kannada by Dr. AS Kiran Kumar, Former Chairman ISRO
https://en.wikipedia.org/wiki/Hiroshima_Peace_Memorial_Museum https://www.unidir.org/ https://emdat.be/https://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf
https://en.wikipedia.org/wiki/Space_Situational_Awareness_Programme https://swfound.org/ https://www.csis.org
https://isulibrary.isunet.edu/doc_num.php?explnum_id=122
https://www.lpi.usra.edu/sbag/meetings/jun2019/presentations/Barbee.pdf
https://iaaspace.org/event/7th-iaa-planetary-defense-conference-2021/
https://portals.iucn.org/library/sites/library/files/documents/CFE-003.pdf

Acknowledgement

With

PSF KRVP EC

Dr. Shobha J, Former Prof of Botany, University of Mysore, Mysuru, India,

Er. Sahana J, MS2011, ISU, Zumba International Health Fitness Trainer, Bengaluru,India

Dr. Spandana J, Resident Surgeon, MCH Endocrine SGSPGI, Lucknow, India

Ar. Sadhana J, Ph.D. Scholar, Environmental Psychology, UoS, UK

And

Prof. Michael Simpson, Former President, ISU Strasbourg, France

Prof. Jean-Michel Contant, Secretary General,IAA

Dr. A S Kiran Kumar, Former Chairman, ISRO

Prof. Balasubramanian A, Former Pro Vice Chancellor, Puducherry University, India

Prof. Mohammad Inayatulla, Civil Engg, UVCE, Bangalore University, Bengaluru,India

Prof . Shashishankar A, Civil Engg , AMC College of Engineering, VTU, Bengaluru,India

now

SEL PDC23 Resource Persons and Volunteers

