2021 AUSTRALIAN SCIENCE OLYMPIAD EXAM

EARTH & ENVIRONMENTAL SCIENCE

TO BE COMPLETED BY THE STUDENT. USE CAPITAL LETTERS.

First Name: ……..…..…… Last Name…….

Date of Birth: ……/……/...….

□ Male □ Female □ Unspecified Year 10 □ Year 11 □ Other: …….

Name of School: ……..……..**State:** ……...

Examiners Use Only:

2021 AUSTRALIAN SCIENCE OLYMPIAD EXAM
EARTH & ENVIRONMENTAL SCIENCE

Time Allowed
Reading Time: 15 minutes
Exam Time: 120 minutes

INSTRUCTIONS

- *Attempt ALL questions of this paper.*
- Permitted materials: Non-programmable, non-graphical calculator, pens, pencils, erasers and a ruler.
- Ensure any written answers are legible.
- All numerical answers must have correct units.
- Marks will not be deducted for incorrect answers.
- Rough working must be done only on pages 69 and 70 of this booklet.
- Data that may be required for a question will be found on pages 3 – 12
- All answers should be marked on this paper. Circle the correct answer in Multiple Choice and True/False questions. Other questions require you to write in the space provided.

MARKS

Multiple choice questions are each worth one (1) mark unless otherwise indicated.

True/False questions are each worth a quarter (0.25) mark.

Other questions are worth the marks indicated on the paper.

Total marks for the paper: 60.0 marks

DATA & DEFINITIONS

Material supplied:

Characters

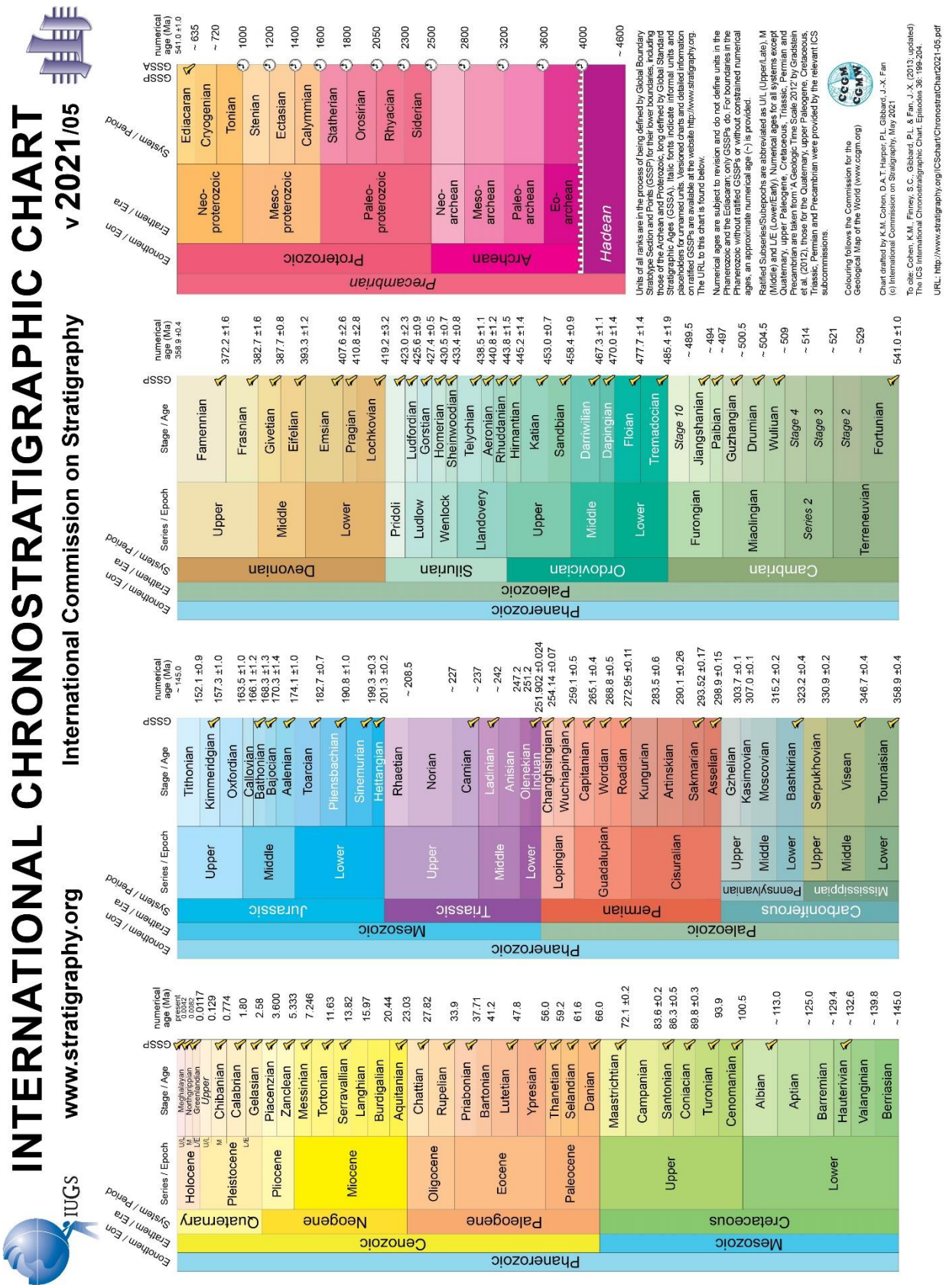
The names of characters, locations and events portrayed in this paper are fictitious (but fun). Enjoy!

Physical constants

Constant	Symbol	Value
Speed of light	c	299,792,458 m/s effectively 3 x 10^8 m/s
Universal gravitational constant	G	6.67 x 10^{-11} Nm^2kg^{-2}
Earth's gravitational acceleration	g	9.8 ms^{-2}
Earth mass	$M_\oplus$	5.98 x 10^{24} kg
Earth radius	$R_\oplus$	6.37 x 10^6 m
$g_{planet} = G \times M_{planet} / R^2_{planet}$		

Periodic Table of the Elements courtesy of

http://sciencenotes.org/category/chemistry/periodic-table-chemistry/



International Chronostratigraphic Chart 2021/05 courtesy of

http://www.stratigraphy.org/index.php/ics-chart-timescale

Note: Numerical age (Ma) means the age in millions of years