

2018 KRONOSAURUS KORNER SCHOOL CHALLENGE

PART 1: CHIMAERIDS AND SHARKS

Most people are familiar with sharks, but few people know about their close relatives, the rare and amazing chimaeroids (pronounced 'KIM – EE – ROYDS')



The curator of Kronosaurus Korner, Michelle Johnston, holding a chimaeroid

This modern chimaeroid is called a rat fish or a ghost shark. It was recently caught off the east coast of Australia. We call it 'Stinky' because, even though it is mummified, it's still a bit 'Stinky' is now part of our new chimaeroid display at Kronosaurus Korner.

The challenge in Part A will ask you to do some research to compare chimaeroids with sharks.

Part 1. of Team Challenge

Prepare a report that describes how chimaeroids are similar to sharks and how they are different

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PART 2: A 100 MILLION YEAR-OLD CHIMAEROID

The skeletons of chimaeroids are made from cartilage, not bone. Because cartilage doesn't fossilise well chimaeroid fossil specimens are rare. Kronosaurus Korner is fortunate to possess the largest chimaeroid fossil collection in the country.

The fossilised spikey barb of a 100 million year-old chimaeroid is pictured below. It would have sat on top of the chimeroid's body when it was alive and provided protection against predators. Stinky's body is shown underneath for comparison.



Fossilised barb and Stinky, with the black and white squares in the scale bar equal to 1cm² each

The fossilised barb is from a chimaeroid that is bigger than Stinky. The challenge in Part B asks you to estimate the size of this fossil chimaeroid.

Part 2. of Team Challenge

Based on the fossil barb pictured above, estimate the life-size of the fossil chimeroid's body. Could one member of your team safely lift this creature?

HOW DID OUR TEAM DO?

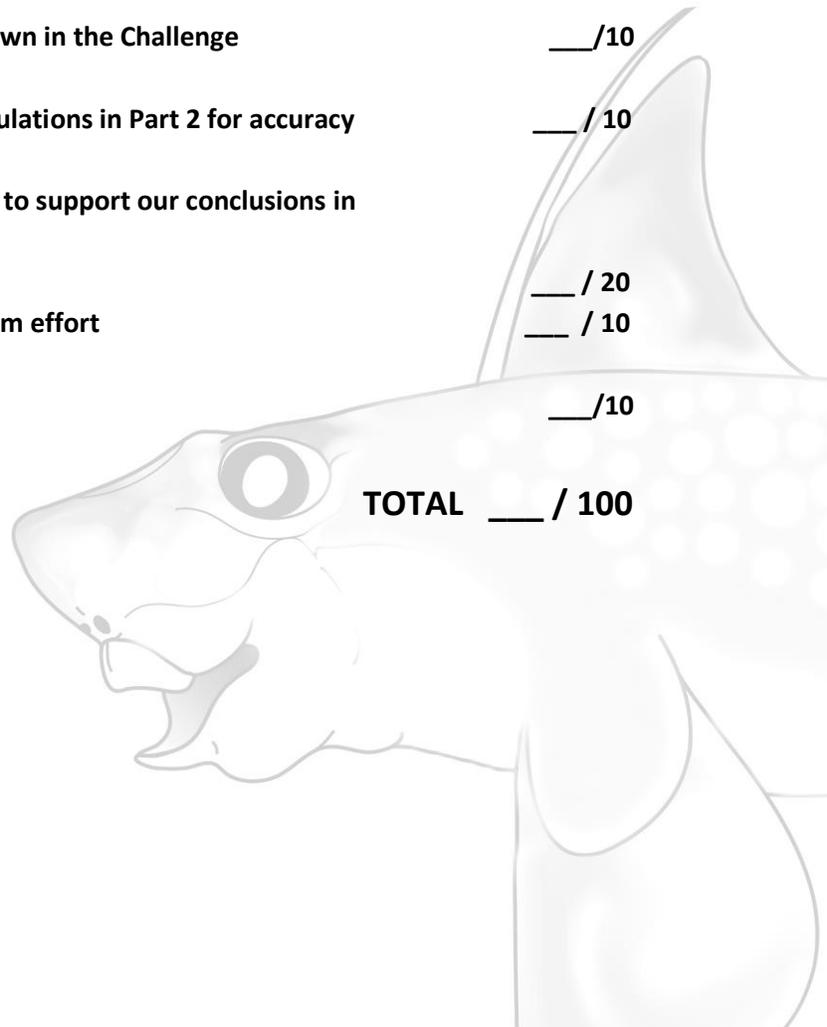
SCHOOL _____

Team (circle one) Gr 5-6 Gr 7 Gr 8-9

TEAM MEMBERS (print)

1. We made good use of all three assessment forms to help us work on both parts of this Challenge ___ / 10
2. We checked our draft report in Part 1 for spelling and grammar, ease of reading, completeness and attractiveness ___ / 10
3. In Part 1, we listed a large number of similarities and important differences between sharks and chimaeroids ___ / 20
4. We made effective use of the pictures shown in the Challenge ___ / 10
5. We double checked our numbers and calculations in Part 2 for accuracy ___ / 10
6. We provided lots of evidence and reasons to support our conclusions in Part 2 ___ / 20
7. Each team member contributed to the team effort ___ / 10
8. Our team enjoyed the 2018 Challenge ___ / 10

TOTAL ___ / 100



TEACHER'S TEAM ASSESSMENT FORM

SCHOOL _____ TEACHER _____

ADDRESS _____

CONTACT: tel _____ e-mail _____

TEAM LEVEL (circle one) Junior Gr 5-6 Intermediate Gr 7 Senior Gr 8-9

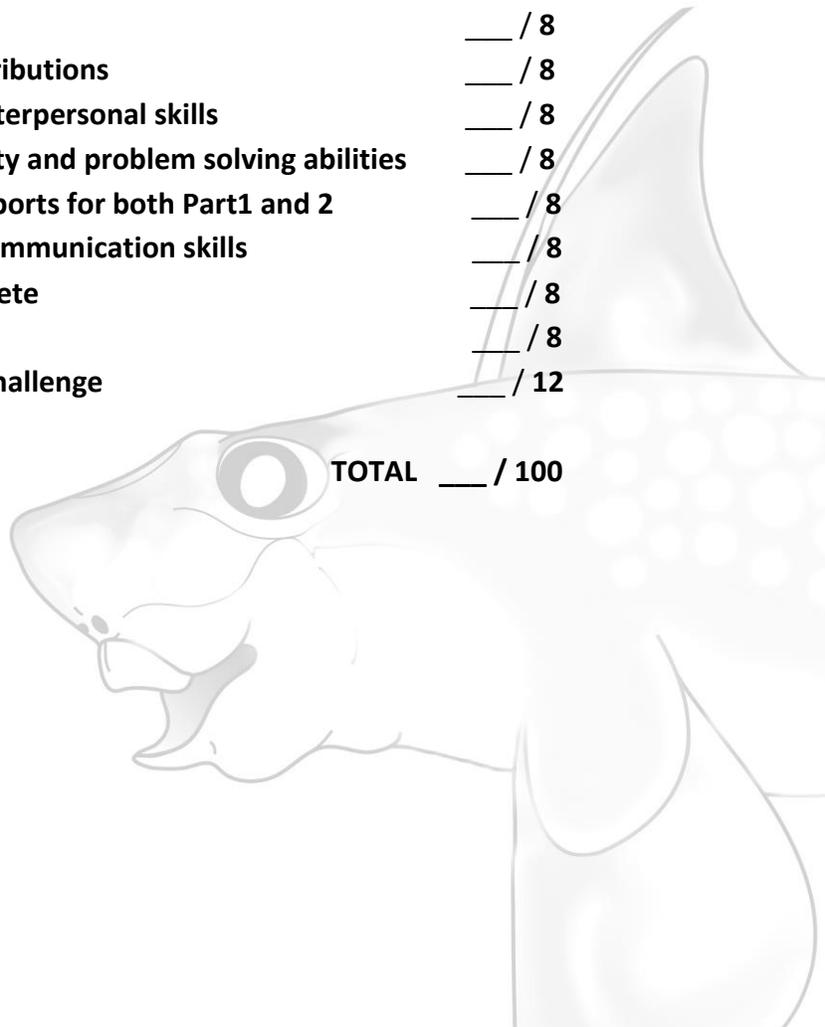
TEAM MEMBERS (print) 1 _____

2 _____ 3 _____

4 _____ 5 _____

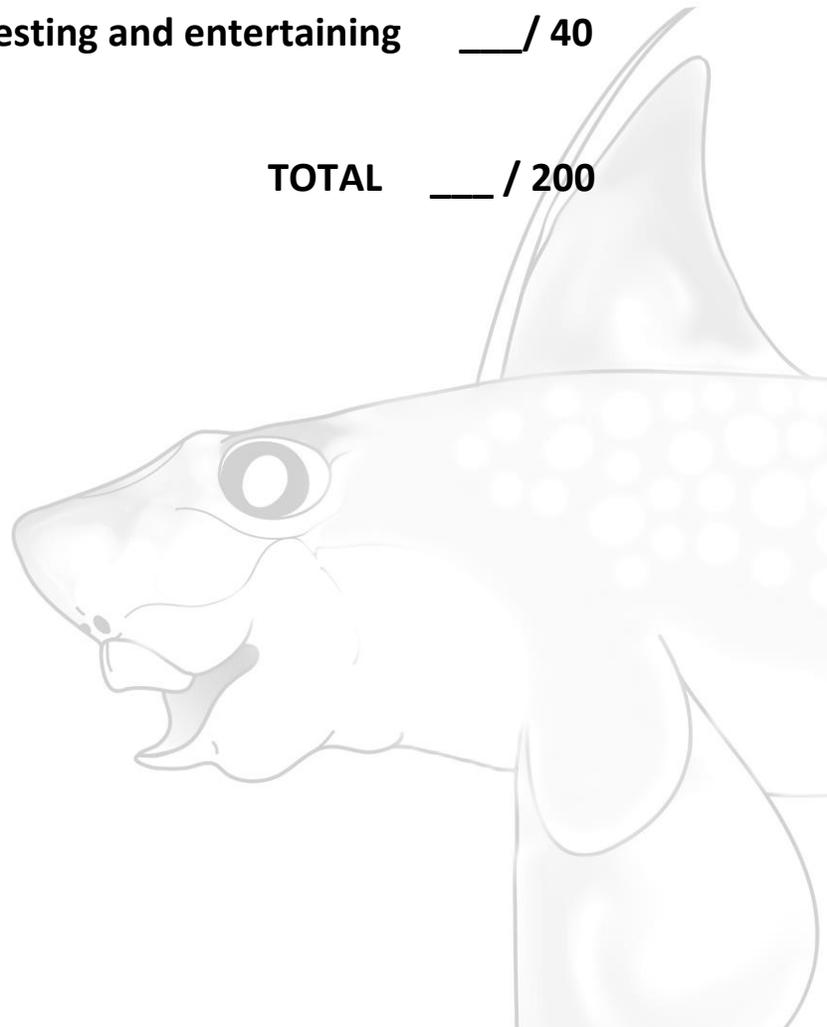
- 1. Initially team needed minimum level of assistance from me _____ / 8
- 2. Team came up with good plan of attack for both parts of Challenge _____ / 8
- 3. Team made reasonable estimates and assumptions _____ / 8
- 4. Team was self-directed _____ / 8
- 5. All team members made positive contributions _____ / 8
- 6. Team members demonstrated good interpersonal skills _____ / 8
- 7. Team members demonstrated creativity and problem solving abilities _____ / 8
- 8. Team edited and refined their draft reports for both Part1 and 2 _____ / 8
- 9. Team members demonstrated good communication skills _____ / 8
- 10. Team Part 1 and Part 2 reports complete _____ / 8
- 11. Team made good use of their time _____ / 8
- 12. This team (and teacher) enjoyed the Challenge _____ / 12

TOTAL _____ / 100



Judge's Scoring Rubric

1. Part 1 of Challenge well-researched ___/ 40
 2. Reasonable assumptions and estimates used ___/ 20
 3. Part 2 accurate measurements /arithmetically correct ___/ 20
 4. Part 1 & 2 responses well-organized ___/ 30
 5. How conclusion arrived at in Part 2 well-explained ___/ 30
 6. Both reports detailed and complete ___/ 20
 7. Response to both parts interesting and entertaining ___/ 40
- TOTAL** ___/ 200



IMPORTANT CONTACT TEACHER INFORMATION

THE 2018 CHALLENGE

Thank you for taking an interest in this year's Challenge. We think you and your students will find the Challenge a unique and valuable learning experience. It is designed to be challenging, different and most of all fun.

This year's Challenge is a 2- part challenge. The task in each part is designed to appeal to a range of students. A wide range of outcomes are possible and anticipated. That is why the same challenge is to be presented to Junior (Gr 5-6), Intermediate (Gr 7) and Senior (Gr 8-9) teams.

GETTING STARTED

You may start the Challenge whenever you wish.

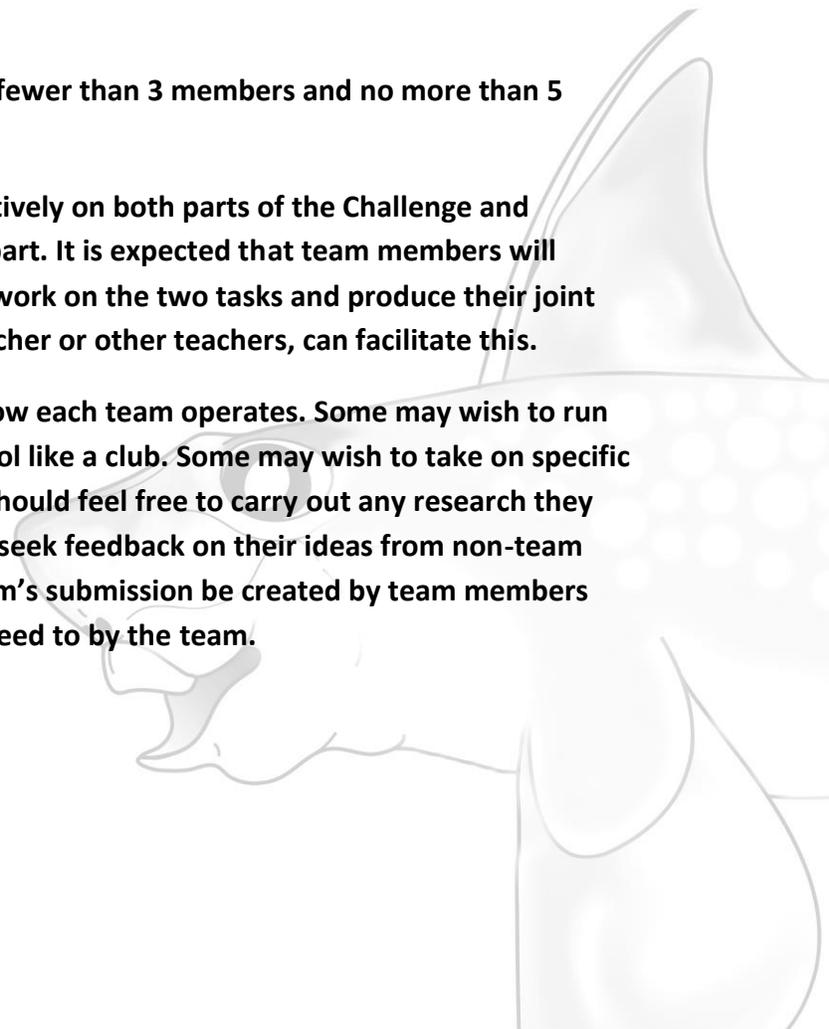
Teams must submit their work to you no more than one month after starting the Challenge.

HOW TEAMS OPERATE

To maximize interaction, a team can have no fewer than 3 members and no more than 5 members.

It is expected that a team will work collaboratively on both parts of the Challenge and produce a single (team) submission for each part. It is expected that team members will decide how they will organize themselves to work on the two tasks and produce their joint submission for each task. You, or another teacher or other teachers, can facilitate this.

It is left to you and your students to decide how each team operates. Some may wish to run several meetings at lunch times, or after school like a club. Some may wish to take on specific tasks as home assignments. Team members should feel free to carry out any research they deem necessary. Students should feel free to seek feedback on their ideas from non-team members. It is important however, that a team's submission be created by team members only, using strategies, results and formats agreed to by the team.



ASSESSMENT

School submissions will be assessed by team members, by you the teacher and thirdly by judges at Kronosaurus Korner. It is important that team members be made aware of how their work will be other-assessed and self-assessed before they start the Challenge. This knowledge should help them shape how they work and make their efforts more productive. That is why each team should be given copies of the three supplied assessment rubrics along with the 2018 Challenge tasks.

Notice that a team will submit a mark out of 100, the teacher a mark out of 100 and the judges at 'KK' a mark of 200.

SUBMISSIONS

You are responsible for e-mailing Team submissions and the two completed assessment sheets to

manager@kronosauruskorner.com.au

Remember, only submit the work of one team for each level participating in the Challenge.

October 19, 2018 is the deadline for all submissions.

FEEDBACK

Museum officials will e-mail your team(s) results, along with some feedback for your team members.

We encourage you to give us feedback on how the Challenge worked in your school along with suggestions for improving future Challenges.

Any questions? Contact manager@kronosauruskorner.com.au

