February 2019

Dear parents and guardians,

This year in physics your student will be learning with the support of meriSTEM resources from The Australian National University.

**What is meriSTEM?**

meriSTEM (modular educational resources in Science, Technology, Engineering and Mathematics) is an initiative of The Australian National University Research School of Physics. Australian schools are adopting these learning materials that have been created by science experts to increase engagement and student achievement.

With meriSTEM, your student’s physics teacher will be able to increase their capacity to tailor their teaching to each student in the classroom. meriSTEM resources include short, content-rich videos, quizzes and in-class activities. All resources are curriculum-aligned and will be delivered as part of the teacher’s integrated plan.

**How is meriSTEM different?**

Research in science education shows that all students can achieve more effectively when they have more opportunities to apply what they have learnt. meriSTEM resources are designed to be implemented with a self-paced study component in order to free up lesson time for discussion, group work and problem solving – activities that apply the learning to contexts. This is sometimes called a ‘flipped’ or inverted classroom approach.

Through the use of meriSTEM resources, your student’s teacher can better facilitate learning for students of all ability levels and learning styles. Evidence for flipped classrooms demonstrates increased grade outcomes, improvements in independent study skills and better long-term retention of concepts, among other benefits. Universities and schools across Australia are increasingly turning to fully implement this approach.

“meriSTEM resources … reinforce the development of real-world STEM skills to assist students in becoming work- and university-ready.”

– Professor Grady Venville, Deputy Vice-Chancellor (Academic),

The Australian National University

*"Flipped learning allowed greater time in the classroom to really explore practical investigations: giving time for experimental design, data analysis, [and] discussion; to work with individual students on concepts and exercises”*

– Teacher using meriSTEM, 2017 Survey respondent

**What should students expect?**

Students should expect to follow the instructions of their teacher, as usual. This will include online activities out of class time as homework. meriSTEM videos are short (average length is 2 minutes 28 seconds), but are packed with information. Students will need to take their own notes and are advised to watch each video more than once, pausing and re-watching when necessary.

Students can expect to spend less time in class listening to their teacher and more time working on problems and in small group teacher-led discussions. They are not expected to master each concept immediately, but to come to class with relevant questions.

**Tips from old students to new from the 2019 Student Survey respondents:**

 *“Take notes on everything, it helps a lot with revision!”*

*“Ask questions in class”*

 *“Stay on top of the videos so you don't fall back in class”*

*“Make sure you take notes and don't just watch them,*

*you learn more that way.”*

**What should parents and guardians expect?**

You can expect your student to spend time outside of the classroom watching videos and answering questions online, while making their own study notes and questions. They will be required to do this in order to fully participate in class.

**You can support your student by:**

* Providing the space, quiet and equipment necessary for online learning; or finding an alternative option, such as at the school or local library.

(You can also request alternative offline content from meriSTEM)

* Asking them about what they are learning, what they understand and what questions they have, as well as about how they learn, and the strategies they use and have tried.

We wish you and your student all the best this year,

Jay Ridgewell, Joe Hope and Tim Friel, on behalf of the meriSTEM team and your student’s teacher

For more information about your student’s physics learning, please contact your student’s classroom teacher.

For more information about meriSTEM, please email contact.meristem@anu.edu.au or

call 02 9215 7011.