• http://youtu.be/9QBv2CFTSWU
Organisation – Content Strands

• Number and Algebra
  – Whole Numbers and Place Value
  – Fractions, Decimals and Real Numbers
  – Money and Financial Mathematics
  – Patterns and Algebra
  – Linear and non-Linear Relationships
Organisation – Content Strands – Cont.

• **Measurement and Geometry**
  – Using Units of Measurement
  – Shape
  – Geometric reasoning
  – Location and Transformation
  – Pythagoras and trigonometry

• **Statistics and probability**
  – Chance
  – Data representation and Interpretation
Proficiency strands

• Describe the actions in which students engage when learning and using the content
• Indicate the breadth of mathematical actions that teachers can emphasise
  – Understanding
  – Fluency
  – Problem solving
  – Reasoning
In the Australian curriculum

Understanding
  (connecting, representing, identifying, describing, interpreting, sorting, …)

Fluency
  (calculating, recognising, choosing, recalling, manipulating, …)

Problem solving
  (applying, designing, planning, checking, imagining, …)

Reasoning
  (explaining, justifying, comparing and contrasting, inferring, deducing, proving, …)
Addressing Student Diversity
Diversity of Students in a Class

In each class there will be a range of prior achievement

• Teachers will identify where students are at in their learning and then select the most appropriate content (possibly from across several year levels) to teach individual and/or groups of students
Students with Special Education Needs

- The majority of students with special education needs would be able to engage with the F – 10 curriculum content provided age-appropriate adjustments are made by teachers, schools and education authorities.

- Some students with special education needs are able to participate in learning experiences and assessment activities provided by the regular curriculum content and standards.
Students for whom EAL/D

• Development of draft statements for inclusion in each learning area which describe who EAL/D learners are and the language requirements of the learning area

• Identification of the language, literacy and skills demands in the draft curriculum to address specific needs of EAL/D learners

• A national EAL/D document written to be accessible to mainstream/ non-specialist teachers.
General Capabilities and Cross Curriculum Priorities
The Three Curriculum Dimensions in Content Descriptions
Cross Curriculum Priorities (CCPs) and General Capabilities (GCs)

- Nature and strength of representation varies within and across learning areas
- Identified by icons (with rollovers)
- May be evident in content descriptions and/or elaborations
- Opportunities for addressing additional CCPs and GCs
- Potential for deep, rich learning where CCPs, GCs and learning area content intersect in content descriptions
- Synergies between various CCPs and GCs
General capabilities

- Literacy
- Numeracy
- Information and communication technology competence
- Critical and creative thinking
- Ethical behaviour
- Personal and social competence
- Intercultural understanding

Cross curriculum priorities

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability
Mathematics and Numeracy

• In Mathematics, numeracy knowledge and skills are developed and applied through all three strands: number and algebra; measurement and geometry; statistics and probability

• To inform curriculum development across the curriculum a numeracy continuum has been developed, based on the strands of English and the numeracy demands specific to learning areas other than mathematics.
### Mathematics / Year 8 / Number and Algebra / Real numbers

<table>
<thead>
<tr>
<th>Content description</th>
<th>Elaborations</th>
</tr>
</thead>
</table>
| Solve a range of problems involving rates and ratios, with and without digital technologies | • understanding that rate and ratio problems can be solved using fractions or percentages and choosing the most efficient form to solve a particular problem  
• calculating population growth rates in Australia and Asia and explaining their difference |

<table>
<thead>
<tr>
<th>Code</th>
<th>General capabilities</th>
<th>Cross-curriculum priorities</th>
</tr>
</thead>
</table>
| ACMNA188                | ![Critical and creative thinking](https://via.placeholder.com/150) | ![ASIA](https://via.placeholder.com/150)  
Asia and Australia’s engagement with Asia |
| Topics                 | ![Information and communication technology competence](https://via.placeholder.com/150) |                                       |
| Rates (Ratios)         | ![Literacy](https://via.placeholder.com/150)   |                                       |
| URL                    | ![Numeracy](https://via.placeholder.com/150)  |                                       |
| http://www.australiancurriculum.edu.au/Elements/ACMNA188                        |                                               |                                       |
### Mathematics / Year 10 / Statistics and Probability / Data representation and interpretation

<table>
<thead>
<tr>
<th>Content description</th>
<th>Elaborations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigate and describe bivariate numerical data where the independent variable is time</td>
<td>• constructing and interpreting data displays representing bivariate data over time</td>
</tr>
<tr>
<td></td>
<td>• investigating biodiversity changes in Australia since white settlement</td>
</tr>
</tbody>
</table>

#### Code
ACMSP252

#### Topics
- Bivariate data; Time

#### URL
Foundation to Year 10 Curriculum content

Rationale and aims
• outline the purpose and structure of the learning area

Content descriptions
• core knowledge, understandings and skills – what students will be taught

Content elaborations
• illustrate and exemplify content

Achievement standards
• Describe the quality of learning typically expected of students; descriptions and work samples

Structure of the Australian Curriculum
Year Level Statements

- Reinforce the significance of the proficiencies within the content descriptions
- Explain how the content is explored or developed
- Provide the language to build in the developmental aspects of the learning of mathematics
Content Descriptions

- Describe the content that students should be taught at a particular year level
- Key concepts, skills and knowledge
- Depth rather than breadth
- Not equivalent in terms of expected time
Content Elaborations

• Illustrate and/or clarify details of the content descriptions

• Designed to assist teachers to develop a common understanding about what is to be taught to students
Assessment and Reporting

• Proposed transition strategy to move from current practices to more nationally consistent assessment and reporting arrangements (to avoid a dual approach) over three consecutive time periods.

• Revise and publish content and achievement standards with work samples; achievement standard linked to mid point on a 5 point scale; communication

• Mid Oct 2010 – Dec 2011: validate achievement standards; build range of work samples

• From 2013: longer term policy on assessment and reporting
Achievement Standards for Year 6 in current web version

By the end of Year 6, students recognise the properties of special numbers. They connect fractions, decimals and percentages as different representations of the same number and solve associated problems. They write correct number sentences. Students predict and communicate probabilities using simple fractions, decimals and percentages and construct and interpret a range of data displays. Students connect decimal representations to the metric system and choose appropriate units of measurement to solve problems. They interpret and use timetables. Students investigate angles. They investigate combinations of transformations and apply the enlargement transformation.
Revised Achievement Standards for Year 6

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.
Senior Secondary
The senior secondary years curriculum

- ACARA is responsible for developing curriculum content and achievement standards for certain senior secondary subjects.
- States and territories will continue to offer subjects that do not overlap significantly with the Australian Curriculum subjects.
- The list of Australian Curriculum subjects may grow in time if there is national agreement.
- ACACA agencies will be responsible for delivery of nationally agreed curriculum content and achievement standards within their jurisdiction ie determining their assessment, certification and quality assurance requirements.
Considerations following consultation

Course A Essential Mathematics

• There is too much content for the intended candidature of Essential Mathematics
• The amount of emphasis on the investigations needs to be reviewed
• Requires further focus on the practical applications of mathematics
• Should aim to build student confidence and success in mathematics in real-life contexts
Considerations following consultation

Course B General Mathematics

• More challenging than the original intent. Course B will be reviewed to ensure it is the course that the majority of students will select.
• The Rationale and Aims will be reviewed to reflect the purpose of General Mathematics
• The Financial units will be reviewed to include a relevant context for the intended cohort
• The gap between Essential Mathematics and General mathematics is being reviewed to ensure that General Mathematics is accessible to the intended cohort
Considerations following consultation

Course C Mathematical Methods

- The course is very full for the time allocation and some students will not cope with the level of rigour, knowledge and skills that is being expected of them
- Assumed knowledge should be included for all topics
- The ordering of the topics need to be considered in alignment with the topics in Specialist Mathematics for those students intending to study both Mathematical Methods and Specialist Mathematics
- Depth of understanding should not be sacrificed to complete all the content
Considerations following consultation

Course D Specialist Mathematics

• The options may cause issues for some students and may not meet the needs of students for further study
• The level of demand of the course should be considered for the needs of the student cohort
• There is a lack of coherence in sequencing as a result of Unit 1 to 4 ie. Units 3 and 4 could be done independently of 1 and 2
• There is a lack of relevance of the content for the students
Second round consultation

The focus for consultation after the redrafting:

• The structure of each course including its aims, rationale and organisation
• The appropriateness and coherence of the units for each course
• The appropriateness and clarity of the draft senior secondary content
• The appropriateness and clarity of the draft achievement standards.
Australian Curriculum Website & Australian Curriculum Connect
Australian Curriculum website

- Information
- Links
- Tags
- Views, downloads
- Work Samples
- Access
- Updates, revisions
- Curriculum review
Australian Curriculum website

- Publication and consultation component
- Process for version control and reporting
- After October 2011 move to AC V2.0
- Curriculum website updates V1.1, 1.2, 1.3
Australian Curriculum Connect

- Look at use of machine readable curriculum and metadata alignment
- Efficient discovery of existing digital content
- Curriculum metadata (including ScOT terms) to allow an accurate connection to resources
- Scootle integration and portal integration
How do the national digital learning resources get to the teachers and students?

Catholic and independent schools
How do the national digital learning resources get to the teachers and students?

Government schools
A diversity of needs

- Didactic resources with designed-in pedagogy
- Student resources for independent learning
- Resources for students with literacy needs
- Highly flexible, adaptable resources
- Local, contextualised resources
- Exemplary resources
- Resources developing teacher content knowledge
- Resources developing teacher pedagogical content knowledge
Types of resources

Teacher & student resources
Datasets
Units of Work
Collections
PD material
Jurisdictional sharing

WestOne (WA)

Centre for Learning Innovation (NSW)

Learning Place (QLD)
National and international cultural agencies

United States
Library of Congress
Smithsonian Institute
Metadata training
Scootle

Thank you
Try this quick quiz!
True or False?

The Australian Curriculum –

1. Is essential but only one part of developing meaningful and relevant teaching and learning programs

2. With its year by year articulation of content and achievement standards, enables teacher to meet the needs of students in their class
3. Achievement standards are intended to emphasise depth of conceptual understanding and sophistication of skills in an ordered sequence of learning F-10.

4. Is designed to be taught well with the overall teaching time and should not take more than 80% of time for any year level.
5. Content descriptions and standards cannot be ommitted by State and Territories in their ‘packaging’ of the curriculum and as part of their implementation i.e. cannot be deleted, changed, re-written

6. Will be available/accessible through a number of websites/portals for teachers
7. The extent of the assessment and reporting of the students learning of general capabilities will be determined by state and territory authorities.

8. ‘being implemented’ means teaching, assessing and reporting is based on the curriculum content and achievement standards as approved by Ministers.