## Investigating production patterns

<table>
<thead>
<tr>
<th>Assessment description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students select one good produced in South Korea, Japan or China that is consumed in Australia. They collect and evaluate data and information to analyse and explain the patterns and trends in production, consumption and trade of the selected good. They propose action/s to manage possible social, environmental and economic effects. Students present their findings in an infographic form.</td>
<td>Multimodal, written and/or spoken</td>
</tr>
</tbody>
</table>

### Multimodal, written and/or spoken Technique

### Research

### Context for assessment

**Students:**
- conduct initial research to select one good produced in South Korea, Japan or China
- develop geographically significant questions to plan an inquiry
- collect and evaluate data and information from a range of sources
- analyse data to propose explanations for patterns, trends, relationships and anomalies
- propose action/s to manage the effects of production
- present findings in a multimodal form that includes representations of data.

### Alignment

**Australian Curriculum 7.3, Year 9 Geography**

Australian Curriculum content and achievement standard ACARA — Australian Curriculum, Assessment and Reporting Authority

www.australiancurriculum.edu.au

**Year 9 Geography standard elaborations**


### Connections

This assessment can be used with the QCAA Australian Curriculum resource titled *Year 9 unit overview — Geography exemplar (Geographies of interconnections)* available at:

www.qcaa.qld.edu.au/downloads/p_10/ac_geog_yr9_unit_overview.docx

### Definitions

**Interconnections:** The ways that people and/or geographical phenomena are connected to each other through environmental processes and human activity. In this assessment, this relates to the phenomena of production and consumption of a good.

**Consequences chart:** A graphic organiser used to consider alternatives to a ‘what if’ question and analyse effects of a geographical problem. It assists in the decision-making process to propose actions and predict outcomes.

**Plus Minus Interesting (PMI) Charts:** A graphic organiser to evaluate and compare options to support making decisions. In the ‘Pluses’ column enter all the positive elements. In the ‘Minuses’ column enter all the negative elements and in the third column enter the elements that cannot be classified precisely as positive or negative (Interesting) or potential outcomes (Implications). A scoring system can be added to this chart to inform decision making.
| **Fair trade strategy:** A fair trade product identifies to consumers that the farmers who grew and harvested it were treated justly and were fairly paid. Fair trade products can face competition from lower prices alternatives.  
**Special purpose map:** A thematic map that shows how qualitative and quantitative data is distributed geographically. Thematic maps usually build on top of a base map in order to convey a specific geographic theme, such as population density, or the composition of exports and imports.  
**Infographic:** Visual representations of data in graphic forms and special purpose maps to present geographical findings. |

**In this assessment**

- Teacher guidelines
- Task-specific standards — matrix
- Assessment resource: Developing geographical inquiry skills: Years 9–10
- Assessment resource: Graphic organisers
- Assessment resource: Digital tools for infographics
- Assessment resource: Evaluating geographical data
- Assessment resource: Features of an infographic
- Student booklet
# Teacher guidelines

## Identify curriculum

<table>
<thead>
<tr>
<th>Content descriptions to be taught</th>
<th>Observing, questioning and planning</th>
<th>Collecting, recording, evaluating and representing</th>
<th>Interpreting, analysing and concluding</th>
<th>Communicating</th>
<th>Reflecting and responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographical Knowledge and understanding</td>
<td>Develop geographically significant questions and plan an inquiry that identifies and applies appropriate geographical methodologies and concepts (ACHGS063)</td>
<td>Collect, select, record and organise relevant geographical data and information, using ethical protocols, from a range of appropriate primary and secondary sources (ACHGS064)</td>
<td>Evaluate multi-variable data and other geographical information using qualitative and quantitative methods, and digital and spatial technologies as appropriate, to make generalisations and inferences, propose explanations for patterns, trends, relationships and anomalies, and predict outcomes (ACHGS067)</td>
<td>Present findings, arguments and explanations in a range of appropriate communication forms, selected for their effectiveness and to suit audience and purpose; using relevant geographical terminology, and digital technologies as appropriate (ACHGS068)</td>
<td>Reflect on and evaluate the findings of the inquiry to propose individual and collective action in response to a contemporary geographical challenge, taking account of environmental, economic and social considerations; and explain the predicted outcomes and consequences of their proposal (ACHGS071)</td>
</tr>
<tr>
<td>Geographical Inquiry and Skills</td>
<td>The way transportation and information and communication technologies are used to connect people to services, information and people in other places (ACHGK066)</td>
<td>The ways that places and people are interconnected with other places through trade in goods and services, at all scales (ACHGK067)</td>
<td>The effects of the production and consumption of goods on places and environments throughout the world and including a country from North-East Asia (ACHGK068)</td>
<td>The ways that places and people are interconnected with other places through trade in goods and services, at all scales (ACHGK067)</td>
<td>The effects of the production and consumption of goods on places and environments throughout the world and including a country from North-East Asia (ACHGK068)</td>
</tr>
</tbody>
</table>

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*Australian Curriculum*

Year 9 Geography

Investigating production patterns

Unit 2: Geographies of interconnections

Teacher guidelines
General capabilities (GCs) and cross-curriculum priorities (CCPs)

This assessment may provide opportunities to engage with the following GCs and CCPs.

- Literacy
- Numeracy
- ICT capability
- Critical and creative thinking
- Personal and social capability
- Ethical understanding
- Intercultural understanding
- Asia and Australia's engagement with Asia
- Sustainability

Achievement standard

This assessment provides opportunities for students to demonstrate the following highlighted aspects.

By the end of Year 9, students explain how geographical processes change the characteristics of places. They predict changes in the characteristics of places over time and identify the possible implications of change for the future. They analyse interconnections between people, places and environments and explain how these interconnections influence people, and change places and environments. Students propose explanations for distributions and patterns over time and across space and describe associations between distribution patterns. They analyse alternative strategies to a geographical challenge using environmental, social and economic criteria and propose and justify a response.

Students use initial research to identify geographically significant questions to frame an inquiry. They collect and evaluate a range of primary and secondary sources and select relevant geographical data and information to answer inquiry questions. They represent multi-variable data in a range of appropriate graphic forms, including special purpose maps that comply with cartographic conventions. They analyse data to propose explanations for patterns, trends, relationships and anomalies and to predict outcomes. Students synthesise data and information to draw reasoned conclusions. They present findings and explanations using relevant geographical terminology and graphic representations in a range of appropriate communication forms. Students propose action in response to a geographical challenge taking account of environmental, economic and social considerations and predict the outcomes and consequences of their proposal.


Sequence learning

Suggested learning experiences

This assessment leads on from the learning experiences outlined in the QCAA’s Year 9 Geography unit overview. The knowledge, understanding and skills developed in the exemplar unit will prepare students to engage in this assessment:

- See unit overview — Year 9 Geography exemplar (Geographies of interconnections)  
  www.qcaa.qld.edu.au/downloads/p_10/ac_geog_yr9_unit_overview.docx

Adjustments for needs of learners

The Australian Curriculum, in keeping with Melbourne Declaration on Educational Goals for Young Australians (2008), establishes the expectations of a curriculum appropriate to all Australian students. All students across all education settings and contexts are supported in their diverse learning needs through the three-dimensions of the Australian Curriculum: the learning area content, the general capabilities and the cross-curriculum priorities. The relationship between and the flexibility to emphasis one or more of the dimensions allows teachers to personalise learning programs.

To make adjustments, teachers refer to learning area content aligned to the child’s chronological age, personalise learning by emphasising alternate levels of content, general capabilities or cross-curriculum
priorities in relation to the chronological age learning area content. The emphasis placed on each area is informed by the child’s current level of learning and their strengths, goals and interests. Advice on the process of curriculum adjustment for all students and in particular for those with disability, gifted and talented or for whom English is an additional language or dialect are addressed in Australian Curriculum — Student Diversity materials.

For information to support students with diverse learning needs, see:

- Queensland Curriculum and Assessment Authority materials for supporting students with diverse learning needs www.qcaa.qld.edu.au/10188.html
- Australian Curriculum Student Diversity www.australiancurriculum.edu.au/StudentDiversity/Student-diversity-advice
- The Melbourne Declaration on Educational Goals for Young Australians www.curriculum.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf

Resources

Software
- Image-editing software, e.g. Paint, Pixlr.com (free online), https://pixlr.com
- Map-generation software, e.g. D-maps (free online) can be used in image-editing software, http://d-maps.com
- Spreadsheet software, e.g. Microsoft Excel, Google Sheets (free online): https://support.google.com/docs/answer/63728?hl=en

Online

Websites supporting case studies
- BBC, South Korea profile, www.bbc.co.uk/news/world-asia-pacific-15289563
- Economy watch, South Korea Economy, www.economywatch.com/world_economy/south-korea/
- Gapminder, http://gapminder.org
- Scoop.it: Year 12 Geography, http://scoop.it/t/year-12-geography

Resources supporting skills of inquiry
### Develop assessment

#### Preparing for the assessment

- Review geographical inquiry and skills\(^1\) using the assessment resource *Developing geographical inquiry skills: Years 9–10*. Focus attention on what is new in Year 9–10 including:
  - representing **multivariable data** in a range of graphic forms such as scatter plots, pie graphs and comparative line graphs
  - constructing special purpose maps
  - evaluating findings and explaining the predicted outcomes and consequences of proposed actions.

- Provide examples of graphical representations, special purpose maps and approaches used by geographers to predict outcomes using:

- Explore the concept of **interconnections** between people, places and environments through the products people buy and the effects of their production on the places that make them. Use the example provided of coffee in the ACARA Year 9 Geography Work sample portfolio to highlight interconnections through the coffee trade.

- Discuss ways to communicate geographical findings effectively using data representations. Use examples of data visualisation and infographics provided in the assessment resources *Digital tools for infographics* and *Features of an infographic*.

- Read through the *Student booklet* and the *Task-specific standards* with the student and answer any questions about the task requirements.


- Review the *Task-specific standards* with students to identify learning goals.


<table>
<thead>
<tr>
<th>Implementing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 1. Conducting research to select a good</strong></td>
</tr>
<tr>
<td><strong>Student role</strong></td>
</tr>
<tr>
<td>Conduct a class survey to identify goods consumed that are produced in the countries of South Korea, Japan or China.</td>
</tr>
<tr>
<td>Complete the table in Section 1 using suggested links and other sources.</td>
</tr>
<tr>
<td>Identify the selected good for research and provide reasons for this choice.</td>
</tr>
</tbody>
</table>

| **Section 2. Developing geographical questions** |
| **Student role** | **Teacher role** |
| Use research areas provided in Table 2 to identify questions to frame the inquiry. | Use Assessment resource: *Framing a geographical inquiry* — guide students to develop their own questions to frame an inquiry. This is located in the Year 7 Geography assessment — *Investigating water scarcity*, [www.qcaa.qld.edu.au/33187.html](http://www.qcaa.qld.edu.au/33187.html). |
| Review questions for range, balance and relevance. | Provide student feedback to ensure questions posed demonstrate: |
| Check that source material provides the information required to respond to inquiry questions. | |

### Section 3. Collecting and evaluating data and information

#### Student role
- Collect relevant and unbiased data and information from reliable government and non-government sources including photographs, maps, reports, data sources and media reports.
- Record and evaluate the reliability of data and information in the table provided.
- Use a digital tool such as a mind map or a graphic organiser to summarise notes on relevant data and information.

#### Teacher role
- Check on the availability of a range of reliable, unbiased and relevant sources.
- Provide models of how to collect and evaluate relevant geographical data and information.
- Use Assessment resource: Evaluating geographical data as a guide for evaluation of sources.
- Provide guidelines for recording summary notes using graphic organisers to scaffold this process.
- Provide feedback to students about their choice of sources.
- Note: Table 3 can be provided electronically or expanded to provide extra space.

### Section 4. Identifying spatial patterns in trade

#### Student role
- Represent your data and information in a special purpose map to identify spatial patterns in trade, using collected data that conforms to cartographic conventions.
- Interpret the map to explain the spatial patterns shown. Consider where the good is produced and where it is consumed.
- Analyse the interconnections between places, people and environments identified in research with a focus on patterns of employment, movement, transportation and proximity to markets.
- Explain, using evidence, how these interconnections have influenced people and changed places and environments over time.

#### Teacher role
- Provide examples of special purpose maps and written explanations of spatial patterns revealed in maps. Student exemplars are available at:
- Provide feedback to ensure students demonstrate critical analysis in their written responses.
- Encourage students to use the task-specific standards to check on their learning goals at this stage of the inquiry process.

### Section 5. Analysing data and information

#### Student role
- Use the three consequence charts or another suitable graphic representation to analyse the impacts of production. Use your research data and information to guide your responses. Focus on:
  - social impacts (conditions of people’s lives)
  - environmental impacts
  - economic impacts.
- Complete Section 5 to prioritise the impacts of producing the selected good.
- Identify the benefits which the selected good provides to the destination countries.

#### Teacher role
- Illustrate how to use a consequence chart to analyse a geographical challenge. Identify examples of short-term and long-term impacts with the students.
- Use Assessment resource: Graphic organisers as required to guide students to select the most suitable graphic representation of their ideas.
### Section 6. Proposing actions and drawing conclusions

**Student role**
- Use the PMI charts provided to analyse two alternative strategies to change patterns of consumption to reduce negative impacts of production. Use Tables 4 and 5 as a guide for recording responses.
- Select one of the strategies and predict the change/s that will occur to address negative impacts of production in Table 6.

**Teacher role**
- Provide examples of how to predict outcomes and consequences of proposed actions in response to a geographical challenge. Student exemplars are available at:
- Provide feedback to ensure students apply geographical thinking in considering both positive and negative impacts of selected strategies.
- Encourage students to use the task-specific standards to check on their learning goals at this stage of the inquiry process.

### Section 7. Presenting findings

**Student role**
- Select an infographic form that includes maps and graphs to present your findings.
- Plan the presentation to include:
  - the **patterns of interconnections** between where the good is produced and where it is consumed
  - the **effects** of production and consumption of this good
  - **proposed strategy** to reduce the negative impact/s of production
  - the **predicted outcomes** of the proposed strategy.
- Use the checklist in Section 7 to review the infographic.

**Teacher role**
- Infographics are an example of a multimodal representation of information. Multimodal representations of findings communicate geographical information in two or more modes (i.e. visual, written and spoken).
- To meet the requirements of the assessment, students could produce an infographic (visual and written modes) and use it to explain their findings to their teacher or the class (spoken mode).
- Use **Assessment resource: Features of infographics** to review the features of this visual representation of findings.
- Explore examples of infographics with students to identify features of quality design and layout to communicate geographical information.
- Examine the examples of representations of geographical information provided in the **Assessment resource: Features of infographics** to consider the graphic forms best suited to communicating particular types of geographical data. For example:
  - line graphs to represent changes over time
  - proportional circles to represent values for particular features.
- Use **Assessment resource: Digital tools for infographics** to support developing an infographic with available applications.
- Review graphic organisers to support the development of geographical findings.
- Provide feedback to students using the checklist provided.
Make judgments

When making judgments about the evidence in student’s responses to this assessment, teachers are advised to use the task-specific standards provided. The development of these task-specific standards has been informed by the Queensland Geography standard elaborations. See www.acara.edu.au/curriculum/worksamples/Year_9_Geography_Portfolio.pdf.

The Queensland standard elaborations for Geography

The Queensland Year 9 standard elaborations for Geography are a resource to assist teachers to make consistent and comparable evidence-based A to E (or the Early Years equivalent) judgments. They should be used in conjunction with the Australian Curriculum achievement standard and content descriptions for the relevant year level.

The Queensland Geography standard elaborations provide a basis for judging how well students have demonstrated what they know, understand and can do using the Australian Curriculum achievement standard.

The Australian Curriculum achievement standards dimensions of Understanding and Skills are used to organise the Queensland Geography standard elaborations.

The valued features of Geography, drawn from the achievement standard and the content descriptions for are organised as:

- Geographical Knowledge and understanding
- Questioning and researching
- Interpreting and analysing
- Communicating.

Task-specific standards

Task-specific standards give teachers:

- a tool for directly matching the evidence of learning in the response to the standards
- a focal point for discussing students’ responses
- a tool to help provide feedback to students.

Task-specific standards are not a checklist; rather they are a guide that:

- highlights the valued features that are being targeted in the assessment and the qualities that will inform the overall judgment
- specifies particular targeted aspects of the curriculum content and achievement standard
- aligns the valued feature, task-specific descriptor and assessment
- allows teachers to make consistent and comparable on-balance judgments about a child’s work by matching the qualities of students’ responses with the descriptors
- clarifies the curriculum expectations for learning at each of the five grades (A–E or the Early Years equivalent)
- shows the connections between what students are expected to know and do, and how their responses will be judged and the qualities that will inform the overall judgment
• supports evidence-based discussions to help students gain a better understanding of how they can critique their own responses and achievements, and identify the qualities needed to improve

• encourages and provides the basis for conversations among teachers, students and parents/carers about the quality of students’ work and curriculum expectations and related standards.

**Task-specific valued features**

Task-specific valued features are the discrete aspects of the valued features of Geography targeted in a particular assessment and incorporated into the task-specific standards for that assessment. They are selected from the Queensland Geography standard elaborations valued features drawn from the Australian Curriculum achievement standard and content descriptions.

**Task-specific valued features for this assessment**

The following table identifies the valued features for this assessment and makes explicit the understandings and skills that students will have the opportunity to demonstrate. This ensures that the alignment between what is taught, what is assessed and what is reported is clear.
<table>
<thead>
<tr>
<th>Australian Curriculum achievement standard dimensions</th>
<th>Australian Curriculum achievement standard</th>
<th>Queensland standard elaborations valued features</th>
<th>Task-specific valued features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographical Knowledge and Understanding</td>
<td>Knowledge and understanding</td>
<td>Analyses the interconnections between places that produce and consume selected products and explains how interconnections have influenced people, and change places and environments</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Explains spatial distributions and patterns over time and describes associations between distribution patterns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analyses alternative strategies to change consumption using environmental, social and economic criteria</td>
<td></td>
</tr>
<tr>
<td>Sections 4 and 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical Inquiry and Skills</td>
<td>Questioning and researching</td>
<td>Uses initial research to identify geographically significant questions to frame an inquiry</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collects and evaluates a range of primary and secondary sources and selects relevant geographical data and information to answer inquiry questions</td>
<td></td>
</tr>
<tr>
<td>Sections 1, 2 and 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpreting and analysing</td>
<td>Analyses data to propose explanations of patterns, trends, relationships and anomalies and predict outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthesises data and information to draw reasoned conclusions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proposes action in response to managing the impacts of production, taking account of environmental, economic and social considerations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proposes outcomes and consequences of their proposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections 4, 5 and 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicating</td>
<td>Presents findings and explanations using relevant geographical terminology and graphic representations in a infographic form</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Represents multivariable data in appropriate graphic forms, including a special purpose maps that complies with cartographic conventions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 4 and 7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The task-specific standards for this assessment are provided in two models using the same task-specific valued features:

- a matrix
- a continua.

Matrix and continua

Task-specific standards can be prepared as a matrix or continua. Both the continua and the matrix:

- use the Queensland standard elaborations to develop task-specific descriptors to convey expected qualities in students' work — A to E (or the Early Years equivalent)
- highlight the same valued features from the Queensland standard elaborations that are being targeted in the assessment and the qualities that will inform the overall judgment
- incorporate the same task-specific valued features, i.e. make explicit the particular understanding/skills that students have the opportunity to demonstrate for each selected valued feature
- provide a tool for directly matching the evidence of learning in the child’s response to the standards to make an on-balance judgment about achievement
- assist teachers to make consistent and comparable evidence-based A to E (or the Early Years equivalent) judgments.

Continua

The continua model of task-specific standards uses the dimensions of the Australian Curriculum achievement standard to organise task-specific valued features and standards as a number of reference points represented progressively along an A to E (or Early Years equivalent) continuum. The task-specific valued features at each point are described holistically. The task-specific descriptors of the standard use the relevant degrees of quality described in the Queensland standard elaborations.

Teachers determine a position along each continuum that best matches the evidence in the student’s responses to make an on-balance judgment about achievement on the task.

The continua model is a tool for making an overall on-balance judgment about the assessment and for providing feedback on task specific valued features.

Matrix

The matrix model of task-specific standards uses the structure of the Queensland standard elaborations to organise the task-specific valued features and standards A to E (or the Early Years equivalent). The task-specific descriptors of the standard described in the matrix model use the same degrees of quality described in the Queensland standard elaborations.

Teachers make a judgment about the task-specific descriptor in the A to E (or the Early Years equivalent) cell of the matrix that best matches the evidence in the student's responses in order to make an on-balance judgment about how well the pattern of evidence meets the standard.

The matrix is a tool for making both overall on-balance judgments and analytic judgments about the assessment. Achievement in each valued feature of the Queensland standard elaboration targeted in the assessment can be recorded and feedback can be provided on the task-specific valued features.
## Use feedback

| Feedback to students | Evaluate the information gathered from the assessment to inform teaching and learning strategies. Focus feedback on the student's personal progress and the next steps in the learning journey. Offer feedback that:  
|                      | • supports the student to self-monitor their progress in undertaking an inquiry  
|                      | • uses prompts for the student to self-check on the degree of quality of their responses  
|                      | • directs the student to use sources of data that are reliable, relevant and unbiased  
|                      | • focuses the consequences of strategies selected to address this geographical challenge  
|                      | • uses the the task-specific standards for this assessment as a basis for monitoring progress.  
| Resources            | For guidance on providing feedback, see the professional development packages titled:  
|                      | • About feedback  
|                      | www.qcaa.qld.edu.au/downloads/p_10/as_feedback_about.docx  
|                      | • Seeking and providing feedback  
|                      | www.qcaa.qld.edu.au/downloads/p_10/as_feedback_provide.docx  

## Investigating production patterns

**Purpose of assessment:** Present findings using an infographic form about production and consumption patterns for a selected good that is produced in a North-East Asian country (China, Japan or South Korea).

<table>
<thead>
<tr>
<th>Understanding and Skills</th>
<th>Task-specific standards — matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographical Knowledge and Understanding</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td><strong>Knowledge and understanding</strong></td>
<td>Analyses the interconnections between places that produce and consume selected products and explains how interconnections have influenced people, and change places and environments <strong>Section 4</strong></td>
</tr>
<tr>
<td><strong>Section 4</strong></td>
<td>Explains spatial distributions and patterns over time and describes associations between distribution patterns</td>
</tr>
<tr>
<td><strong>Section 6</strong></td>
<td>Discerningly analyses alternative strategies to change consumption using environmental, social and economic criteria and justifies a response</td>
</tr>
</tbody>
</table>

Continues over page
## Investigating production patterns

<table>
<thead>
<tr>
<th>Understanding and Skills</th>
<th>Questioning &amp; researching</th>
<th>Geographical Inquiry and Skills</th>
<th>Interpreting &amp; analysing</th>
<th>Synthesising data and information to draw reasoned conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>Discerningly uses initial research to develop <strong>discerning</strong> geographically significant questions to frame an inquiry</td>
<td>Effectively uses initial research to develop <strong>informed</strong> geographically significant questions to frame an inquiry</td>
<td>Uses initial research to identify geographically significant questions to frame an inquiry</td>
<td>Uses initial research to identify geographically significant questions to frame an inquiry</td>
<td>Identifies geographically significant questions related to an inquiry</td>
</tr>
<tr>
<td>Collects and evaluates a range of sources and selects relevant geographical data and information to answer inquiry questions</td>
<td>Collects and evaluates <strong>in an informed way</strong> a range of sources and selects relevant geographical data and information to effectively answer inquiry questions</td>
<td>Collects and evaluates <strong>a range of sources and selects relevant geographical data and information to answer inquiry questions</strong></td>
<td>Collects and explains <strong>uses of sources and use of geographical data and information to answer aspects of inquiry questions</strong></td>
<td>Collects <strong>sources and uses aspects of geographical data and information</strong></td>
</tr>
<tr>
<td>Analyses data to propose <strong>discerning explanations of patterns, trends, relationships and anomalies and predict discerning outcomes</strong></td>
<td>Analyses data to propose <strong>informed explanations of patterns, trends, relationships and anomalies and predict informed outcomes</strong></td>
<td>Analyses data to propose explanations of patterns, trends, relationships and anomalies and predict outcomes</td>
<td>Analyses data to describe patterns, trends, relationships and anomalies and predict aspects of outcomes</td>
<td>Uses data to make statements about patterns, trends, relationships and anomalies and make statements about outcomes</td>
</tr>
<tr>
<td>Synthesises data and information to draw <strong>discerning and reasoned conclusions</strong></td>
<td>Synthesises data and information to draw <strong>effective and reasoned conclusions</strong></td>
<td>Synthesises data and information to draw reasoned conclusions</td>
<td>Synthesises data and information to draw conclusions</td>
<td>Uses data and information to make statements</td>
</tr>
</tbody>
</table>

**Continues over page**
## Investigating production patterns

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding</td>
<td>Proposes action in response to managing the impacts of production, taking account of environmental, economic and social considerations</td>
<td>Proposes action in an informed way response to managing the impacts of production taking account of environmental, economic and social considerations</td>
<td>Proposes action in response to managing the impacts of production taking account of environmental, economic and social considerations</td>
<td>Identifies action in response to managing the impacts of production taking account of aspects of environmental, economic and social considerations</td>
<td>States action related to managing the impacts of production taking account of environmental, economic and social considerations</td>
</tr>
<tr>
<td>Geographical Inquiry and Skills</td>
<td>Makes a justified prediction of the outcomes and consequences of their proposal</td>
<td>Makes a plausible prediction of the outcomes and consequences of their proposal</td>
<td>Predicts outcomes and consequences of their proposal</td>
<td>Predicts partial outcomes and consequences of their proposal</td>
<td>Makes statements about the outcomes</td>
</tr>
<tr>
<td>Communicating</td>
<td>Purposefully presents findings using relevant geographical terminology and graphic representations in an infographic form</td>
<td>Effectively presents findings using relevant geographical terminology and graphic representations in an infographic form</td>
<td>Presents findings using relevant geographical terminology and graphic representations in an infographic form</td>
<td>Partially presents findings using geographical terminology and aspects of graphic representations in an infographic form</td>
<td>Presents in a fragmented way findings using everyday language and fragmented graphic representations in an infographic form</td>
</tr>
<tr>
<td>Representing multivariable data in appropriate graphic forms, including a special purpose map that complies with cartographic conventions</td>
<td>Accurately represents in detail multivariable data in appropriate graphic forms, including a special purpose map that consistently conform to cartographic conventions</td>
<td>Represents in detail multivariable data in appropriate graphic forms, including a special purpose map that comply with cartographic conventions</td>
<td>Represents multivariable data in appropriate graphic forms, including a special purpose map that comply with cartographic conventions</td>
<td>Partially represents multivariable data in aspects of graphic forms, including a special purpose map that comply with aspects of cartographic conventions</td>
<td>Represents in a fragmented way multivariable data in graphic forms, including a special purpose map</td>
</tr>
</tbody>
</table>

Australian Curriculum Year 9 Geography

Investigating production patterns

Unit: Geographies of interconnections

Task-specific standards — matrix
Developing geographical inquiry skills: Years 9–10

Investigating production patterns

New learning
Base learning on the concepts of geographical understandings

Questioning
Use initial research to develop and modify geographically significant questions to frame an inquiry
Plan an inquiry using appropriate geographical methodologies and concepts

Collecting data
Collect data and information, using ethical protocols, from a range of appropriate primary and secondary sources
Select, record and organise geographical data and information
Evaluate data and information for reliability, bias and usefulness

Representing data
Represent multivariable data and information in a range of appropriate graphic forms
Represent the spatial distribution of different geographical phenomena by constructing large-scale and small-scale maps that conform to cartographic conventions

Communicating
Present findings, arguments and explanations in a range of forms
Use geographical terminology and construct graphic forms

Interpreting
Evaluate multivariable data and information using qualitative and quantitative methods
Make generalisations and inferences
Propose explanations for spatial distributions, patterns, trends and relationships and anomalies
Synthesise data and information to draw conclusions

Reflecting and responding
Reflect on and evaluate findings
Propose individual and collective actions in response to challenges
Explain predicted outcomes and consequences of proposals
**Graphic organisers**

This table provides examples of graphic organisers to plan and organise ideas, develop proposals in response to a geographical challenge and consider future effects of proposals.

<table>
<thead>
<tr>
<th>Graphic organiser</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequences chart</td>
<td>Consider alternatives to a ‘what if’ question or a problem. Suggest possible solutions and then record the expected consequence of each solution to assist in making a final decision.</td>
</tr>
<tr>
<td>Venn diagram</td>
<td>Compare the characteristics of two or more places or phenomena. Record aspects of similarity where the circles overlap and aspects of difference in the separate sections of the circle. This is a good way of synthesising ideas to draw conclusions.</td>
</tr>
<tr>
<td>Futures wheel</td>
<td>Consider how a change or decision may affect the future of other areas. This is useful in the brainstorming stage of assessing the future consequences of proposed actions and decisions.</td>
</tr>
<tr>
<td>Placemat</td>
<td>Consider personal opinions on a question or issue and then discuss and record a group response.</td>
</tr>
<tr>
<td>PMI (Plus, Minus, Interesting) chart</td>
<td>Evaluate an issue and compare advantages and disadvantages to inform decision making. In the Pluses column enter all the positive elements, in the Minuses column enter all the negative elements and in the third column enter the elements that cannot be classified precisely as positive or negative (Interesting) or potential outcomes (Implications). A scoring system can be added to this chart to inform decision making.</td>
</tr>
<tr>
<td>Web (concept) map</td>
<td>Assists in activities that involve planning, brainstorming, note making, organising or problem solving. Record the issue or topic in the centre and note the related ideas around it. Use lines, colours, labels and arrows to show links between ideas.</td>
</tr>
</tbody>
</table>
Digital tools for infographics

The following resources provide digital tools for representing data and information in graphical texts. To develop these texts, planning must provide opportunities for detailed analysis, synthesis of ideas and arguments in order to communicate effectively about a geographical challenge.

The following resources allow users to create their own infographics with statistics, charts, images and, in some cases, maps. All of these sites contain freely available digital tools for non-commercial use, and some have additional paid resources.

<table>
<thead>
<tr>
<th>Title</th>
<th>Weblink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual.ly</td>
<td><a href="http://visual.ly">http://visual.ly</a></td>
</tr>
<tr>
<td>Easel.ly</td>
<td><a href="http://www.easel.ly">www.easel.ly</a></td>
</tr>
<tr>
<td>Piktochart</td>
<td><a href="http://piktochart.com">http://piktochart.com</a></td>
</tr>
<tr>
<td>Tableau public</td>
<td><a href="http://www.tableausoftware.com/public/community">www.tableausoftware.com/public/community</a></td>
</tr>
<tr>
<td>Infogram</td>
<td><a href="http://infogr.am">http://infogr.am</a></td>
</tr>
<tr>
<td>Show® World</td>
<td><a href="http://show.mappingworlds.com/world">http://show.mappingworlds.com/world</a></td>
</tr>
<tr>
<td>Tagxedo</td>
<td><a href="http://www.tagxedo.com">www.tagxedo.com</a></td>
</tr>
<tr>
<td>Creately</td>
<td><a href="http://creately.com">http://creately.com</a></td>
</tr>
<tr>
<td>Statsilk</td>
<td><a href="http://www.statsilk.com">www.statsilk.com</a></td>
</tr>
<tr>
<td>Venngage</td>
<td><a href="http://venngage.com">http://venngage.com</a></td>
</tr>
</tbody>
</table>
In developing skills of geographical inquiry, data may be used to:

- identify a pattern or distribution, (e.g. the distribution of global internet traffic)
- describe a characteristic (e.g. the number of poor people in the world)
- make comparisons over time (e.g. the number of poor people in 1990 and 2005)
- find relationships between variables (e.g. poverty and GDP per capita).

It is important to consider that data may:

- be incomplete (as it is costly and difficult to collect)
- define concepts differently (e.g. what it means to be a poor person)
- present an incomplete picture (e.g. 400 million people sounds like a lot but how many are still living in poverty? How has the population of the world changed?) Often data is presented for a country as a whole and does not indicate any variation within a country or may be based on a sample or projection.

Questions to ask when evaluating the reliability, bias and usefulness of data in sources:

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Bias</th>
<th>Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who has collected his data?</td>
<td>Is there any bias presented in this data?</td>
<td>What is the data measuring or representing?</td>
</tr>
<tr>
<td>When was this data collected?</td>
<td>What bias, attitude and values might influence this collection of data?</td>
<td>What does the data not measure or represent?</td>
</tr>
<tr>
<td>Where was this data collected?</td>
<td>Is this data similar to or different from other sources?</td>
<td>What patterns, trends and relationships can be drawn from this data?</td>
</tr>
<tr>
<td>Why was this collection of data created?</td>
<td>Can you find evidence to support this data?</td>
<td>How does this data help you respond to your investigation?</td>
</tr>
<tr>
<td>Can I trust the author of this source of data?</td>
<td>Can you represent the data in a graphical form?</td>
<td>Can you describe the data in verbal or written form?</td>
</tr>
<tr>
<td>How accurate is the data compared with other sources?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Features of an infographic

<table>
<thead>
<tr>
<th>Graphic format</th>
<th>Annotation</th>
</tr>
</thead>
</table>
| Population     | **Title** to provide an overview of the key idea of the infographic.  
**Special purpose map** showing information about a specific topic that can relate to different sets of data. This special purpose map integrates a pie graph showing:  
1. the percentage of population living in rural and urban areas  
2. the location of Bangladesh in the world  
3. age breakdown of population.  
It provides the reader with a snapshot of the population of Bangladesh. |

### Population density

- Rural (70%)  
- Urban (30%)

### Age structure

- 0–14 years: 32.3%  
- 15–24 years: 18.8%  
- 25–54 years: 38%  
- 55–64 years: 5.9%  
- 65 years and over: 5%

---

**Country: Bangladesh**  
**Area:** 147,750 km²  
**Population:** 160,411,249  
**Density:** 1,114 people per km²
Coastline: 580 km  
Topography: Predominantly low-lying alluvial plains, hilly in south east  
Lowest point: 0 m/asl  
Highest point: 1230 m/asl  
Climate: Tropical  
Winter: Mild; October–March  
Summer: Hot, humid; March–June  
Monsoon season: Humid, warm; June–October  

Land use:
- Arable land (53%)  
- Permanent crops (6%)  
- Other (41%)
Natural hazards

Trend chart

Data sets here are represented in different graphical forms including a picture graph, line graph, bar and column graphs.

Some graphs may use multivariable data such as a scatterplot (which can be created in spreadsheet software, e.g. Excel).

Multivariable data can be used to answer questions like: ‘What is the relationship between …?’
Economy

**GDP — composition by sector**

- Agriculture
- Industry
- Services

**Labour force — composition by sector**

- Agriculture (47%)
- Industry (13%)
- Services (40%)

**Agricultural goods produced**
rice, jute, tea, wheat, sugarcane, potatoes, tobacco, pulses, oilseeds, spices, fruit, beef, milk, poultry

**Manufactured (industry) goods produced**
jute, cotton, garments, paper, leather, fertiliser, iron and steel, cement, petroleum products, tobacco, pharmaceuticals, ceramics, tea, salt, sugar, edible oils, soap and detergent, fabricated metal products, electricity, natural gas

**Trends and patterns identified in data**

**Sources**
- Bangladesh Bureau of Statistics (BBS), [http://203.112.218.65/](http://203.112.218.65/)
- PreventionWeb, Bangladesh: Disaster statistics, [www.preventionweb.net/english/countries/statistics/?cid=14](http://www.preventionweb.net/english/countries/statistics/?cid=14)
- Shamsuddoha, MD et al, June 2013, Local Perspective on Loss and Damage in the Context of Extreme Events: Insights from Cyclone-affected Communities in Coastal Bangladesh, Center for Participatory Research and Development (CRPD), [www.lossanddamage.net/download/7105.pdf](http://www.lossanddamage.net/download/7105.pdf)
- UNdata: A world of information, [http://data.un.org](http://data.un.org)
- United Nations Development Programme (UNDP) in Bangladesh, [www.bd.undp.org/content/bangladesh/en/home.html](http://www.bd.undp.org/content/bangladesh/en/home.html)
Select one good produced in South Korea, Japan or China that is consumed in Australia. Collect and evaluate data and information to analyse and explain the patterns and trends in production, consumption and trade of the selected good. Propose action/s to manage possible social, environmental and economic effects. Present your findings in an infographic form.

You will:
- conduct initial research to select one good produced in South Korea, Japan or China
- develop geographically significant questions to plan an inquiry
- collect and evaluate data and information from a range of sources
- analyse data to propose explanations for patterns, trends, relationships and anomalies
- propose action/s to manage the effects of production
- present findings in an infographic form that includes representations of data.
Section 1. Conducting research to select a good

Conduct a class survey to identify which goods consumed by the class are produced in the countries of South Korea, Japan or China.

Collect data to complete the table below. The links to sources below will help you.

**Remember to focus on goods produced in South Korean, Japan or China.**

- **Goods and origins source**
  
  *World Trade Organisation: Merchandise trade*
  
  www.wto.org/english/res_e/statis_e/its2013_e/its13_merch_trade_product_e.htm

- **Destinations**
  
  *US Central Intelligence Agency: The World Factbook*
  
  www.cia.gov/library/publications/the-world-factbook

- **Goods, origins and destinations**
  
  *Trade Support Institutions: Trade Statistics*
  
  www.intracen.org/trade-support/trade-statistics

<table>
<thead>
<tr>
<th>Good</th>
<th>Origin</th>
<th>Destinations (i.e. export partners)</th>
<th>% Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Agricultural products</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Clothing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Automotive parts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Textiles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White goods</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Identify the focus for your research inquiry and your reasons for selecting this good.

**Good:** ...................................................................................................................................................

**Reason/s:** ............................................................................................................................................

............................................................................................................................................................

.............................................................................................................................................................
### Section 2. Developing geographical questions

**Develop a range of geographically significant questions to frame your inquiry.**

Use the information from your earlier research to develop your questions for each research area in the table.

Table 2: Inquiry questions

<table>
<thead>
<tr>
<th>Research area</th>
<th>Inquiry questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons why this good is produced in the selected location in North-East Asia</td>
<td></td>
</tr>
<tr>
<td>Location for the production of this good and the reasons why this good is produced in this location</td>
<td></td>
</tr>
<tr>
<td>Destination/s for the production and consumption for this good and the interconnections between the places</td>
<td></td>
</tr>
<tr>
<td>Changes in patterns of production and consumption over time</td>
<td></td>
</tr>
<tr>
<td>Spatial patterns and trends revealed in data</td>
<td></td>
</tr>
<tr>
<td>Relationships between places where the good is produced and consumed</td>
<td></td>
</tr>
<tr>
<td>Impacts of the production of the selected good on people, places and the environment</td>
<td></td>
</tr>
<tr>
<td>Strategies to manage the impacts of the production of the selected good</td>
<td></td>
</tr>
<tr>
<td>Predictions and future consequences</td>
<td></td>
</tr>
</tbody>
</table>
Section 3. Collecting and evaluating data and information

1. Collect **reliable**, **relevant** and **unbiased** data and information to answer each of your inquiry questions. The information you gather will be used to create an **infographic**.
   - Use a **range of different sources** such as graphs, surveys, atlases or interactive maps, satellite images, aerial photographs, reports, databases, journals, websites, government organisations and non-government organisations.
   - Use or adapt the following table to **record** and **evaluate** your sources and **make notes** for your multimodal presentation.

### Table 3: Source evaluation

<table>
<thead>
<tr>
<th>Name of source &amp; bibliography information</th>
<th>Type of source (e.g. primary, secondary, written, video)</th>
<th>Evaluation of the source (e.g. who wrote it, for what purpose, is it reliable, is it useful, is it biased?)</th>
<th>Inquiry questions this source will answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

2. Use tools such as mindmaps and graphic organisers to **record** and **organise** your data and information from your sources.
Section 4. Identifying spatial patterns in trade

Use a spatial application or the map below to locate the place where your chosen good is produced and the places where the good is exported.

- Select which information about production and consumption you will represent on the map.
- Determine the most appropriate form to represent this data.
- Be sure your map conforms to cartographic conventions.

Explain the spatial patterns in trade revealed on your map.
Consider:
- where the good is produced
- where the good is consumed.

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Use your map to **identify and explain** the interconnections between places, people and environments. Consider:

- employment
- movement patterns
- transport routes
- markets.

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**Explain** how these interconnections have influenced people and changed places and environments over time. Use evidence provided in sources.

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**Section 5.  Analysing data and information**

Use the consequences charts on the following pages to analyse the impacts of production in the country of origin for your good. (Think about positive as well as negative impacts.) Use one chart for each of the following:

- social (condition of people’s lives — e.g. impact of low wages; employment status)
- environmental (natural environment — e.g. impact of resource use)
- economic (money — e.g. total value of export).
Chart 1: Social impacts
Chart 2: Environmental impacts
Chart 3: Economic impacts
Summarise the impacts on the country of production that are shown in your consequences charts. Consider this information to prioritise the impacts into an order of importance.

What are the benefits to consumer countries of importing these goods?
Section 6. Proposing actions and drawing conclusions

Use the PMI charts below to analyse two alternative strategies aimed at changing patterns of consumption to reduce the negative impacts of production.

Table 4: Fair trade strategy

<table>
<thead>
<tr>
<th></th>
<th>Positives</th>
<th>Minuses</th>
<th>Interesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: ___________ strategy

<table>
<thead>
<tr>
<th></th>
<th>Positives</th>
<th>Minuses</th>
<th>Interesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What outcomes do you predict will occur as a result of implementing your chosen strategy, on both the country of production and the country of consumption?

Table 6: Predicted outcomes

<table>
<thead>
<tr>
<th></th>
<th>Country of production</th>
<th>Country of consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which strategy is the most suitable to address negative impacts of production in the country of production?
Section 7. Presenting findings

An infographic uses visual representations of data in graphic forms and special purpose maps to present geographical findings.

Use the data and evidence you have collected to present your findings in an infographic form that includes:

a. the patterns of interconnections between where the good is produced and where it is consumed
b. the effects of production and consumption of this good
c. a proposed strategy to reduce the negative impact/s of production
d. the predicted outcomes of the proposed strategy.

Use this checklist to review your infographic

<table>
<thead>
<tr>
<th>Check that you have:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ clearly identified geographical concepts including:</td>
</tr>
<tr>
<td>– interconnections</td>
</tr>
<tr>
<td>– change</td>
</tr>
<tr>
<td>– spatial distributions</td>
</tr>
<tr>
<td>– places and environments</td>
</tr>
<tr>
<td>□ used relevant images and graphics</td>
</tr>
<tr>
<td>□ made connections between ideas and visual representations</td>
</tr>
<tr>
<td>□ used appropriate layout, graphics and geographical terminology to effectively communicate your findings</td>
</tr>
<tr>
<td>□ used relevant geographical terminology</td>
</tr>
<tr>
<td>□ represented data and information clearly</td>
</tr>
<tr>
<td>□ used appropriate cartographic conventions</td>
</tr>
<tr>
<td>□ labelled graphs with titles, legend (key), source and clear intervals on axes</td>
</tr>
<tr>
<td>□ responded to feedback from your teacher and peers.</td>
</tr>
</tbody>
</table>