# Teaching advice Health and Movement Science Year 11

## Collaborative investigation

In Year 11 Health and Movement Science, students engage in a Collaborative Investigation. Students work collaboratively to investigate an agreed topic aligned with content and concepts explored throughout coursework. Completion of the investigation forms a component of the mandatory coursework for Year 11 Health and Movement Science. Teachers can decide when and how a Collaborative Investigation is undertaken.

Participation in the investigation allows students to build and extend their subject knowledge and develop a range of skills to apply their knowledge and understanding. The focus of the investigation is on the knowledge and understanding, skills and processes involved, and the findings of the investigation.

Teachers should consider how they can provide opportunities for students to both consolidate their understanding and deepen their knowledge through an investigation into an area of personal interest.

In the Collaborative Investigation students:

are provided with opportunities to positively interact with others to work collaboratively to reach agreements and decisions

develop their skills to become flexible, critical thinkers, problem-solvers and decision-makers

negotiate plans and tasks, distribute leadership, create and maintain a positive group environment, and give and receive feedback

adopt an informed point of view when responding by speculating, critiquing, analysing, interpreting and constructing possible meanings for their own and others’ health, physical activity levels and performance.

Some students with disability may require [adjustments](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/Diversity-in-learning/stage-6-special-education/adjustments) to engage with the collaborative investigation.

The Year 11 Collaborative Investigation will include the following elements:

Design – proposal

Documentation – portfolio

Presentation of findings – where possible, to an authentic audience

Reference list.

### Requirements

The requirements for the Collaborative Investigation are:

* a total of 20 hours course time
* assessment of knowledge, understanding and skills outcomes, including assessment of outcome HM-11-05
* a research question for investigation that reflects an area of interest for students
* assessment of the process and findings
* an individual assessment and a group assessment.
* The research question selected for investigation should reflect an area of interest for students. The question:
  + must focus on a concept and further students understanding in the Health and Movement Science course
  + must not overlap significantly with an investigation or research being undertaken in another 11–12 course, including Depth Studies within the Health and Movement Science course.

### Collaboration in the Collaborative Investigation

Collaboration in the Collaborative Investigation involves working together to achieve a common purpose or goal. Working collaboratively can provide an opportunity for students to build and use social and communication skills including working with others, sharing ideas, discussing differences and learning to deal with conflict in ways that are positive and respectful. These skills build strong foundations for success in future learning and life after school. Collaboration is about interdependent groups relying on the actions of each other, to enhance the success of the investigation. Collaboration is not simply the allocation of tasks amongst group members.

Some students may require additional support or [adjustments](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/Diversity-in-learning/stage-6-special-education/adjustments) as they acquire these skills at different rates. This may be as a result of difficulties with managing anxiety, communication and language development, cognitive ability, emotional regulation and executive function.

Students may need to be explicitly taught skills such as:

* presenting alternative perspectives or opinions
* asking for and offering advice or feedback
* accepting feedback
* resolving conflict.

The following strategies can be used to support students to develop collaboration skills:

* providing opportunities to practice collaboration prior to undertaking the Collaborative Investigation
* co-designing a checklist of collaboration skills with students that can be referred to during collaboration
* considering group size and how groups are formed, for example self-selected, mixed ability, pairing students together to facilitate appropriate mentoring or support
* assigning roles to group members to support effective group functioning
* considering the environment that groups will work in, for example arrangement of space and furniture to facilitate collaboration, provision of quiet spaces to facilitate communication
* enabling access to technology to supplement or replace face-to-face collaboration, for example online tools and applications
* providing script prompts and accessing models, such as sentence starters; role playing scenarios to support specific skills, for example how to respectfully present different viewpoints and ideas .

Students with disability may need to use their [preferred communication form(s)](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/Diversity-in-learning/stage-6-special-education/adjustments) when collaborating with others.

### Process of completion

The following table outlines the 5 phases, and the steps within each phase, students will work through to complete the Collaborative Investigation. Suggested times for checkpoints have been included to support assessment.

| Phase | Components | Component may incorporate: |
| --- | --- | --- |
| Phase 1 | Investigation introduction | syllabus deconstruction – mind map  concepts studied  personal interests: what do you want to know more about? |
| Collaboration group formation | based on personal interests/engagement with syllabus area |
| Topic proposal | groups decide on their topic of investigation  proposal shows clear personal engagement |
| Preliminary research | purpose: to be familiar with the topic in enough detail to design a research question |
| Research question | the research question is developed in the context of the selected area of research  the research question drives the investigation and so must be clear and focused, researchable and meaningful |
| Checkpoint | feedback on collaborative practice  research question approval |
| Phase 2 | Background research | what understandings are critical to this investigation?  definitions  processes  have any other studies been conducted that align with the research question?  how are they similar/different?  how do these studies inform potential findings of your own research? |
| Propose hypothesis | a precise statement that predicts the outcome of the research question based on background research |
| Checkpoint | phases 1 and 2 can be compiled to form the proposal component |
| Phase 3 | Method | clear and precise description of how data will be collected  resources  ethical considerations  risk assessment  variables  what data needs to be collected/collated?  how will data be presented? |
| Checkpoint | feedback on collaborative practice  method approval |
| Phase 4 | Data collection | quantitative  qualitative |
| Data presentation | textual  tabular  diagrammatic |
| Data analysis | data processed appropriately  mean  median  correlation  alignment to normative values |
| Phase 5 | Conclusion | restate the purpose of the experiment  identify the main findings  identify any key limitations relevant to the interpretation of the results |
| Evaluation of investigation | strengths  limitations  improvements |
| Checkpoint | feedback on collaborative practice  review of findings |
| Presentation of investigation | appropriate presentation of:   * research question * background research * methodology * data * data analysis * conclusion * evaluation |

### Potential topics

**Health and Movement Science**

To what extent does High Intensity Interval Training (HIIT) affect physiological responses for a trained athlete?

How do hormones affect the motivation of young people to be active?

How can sustainable healthcare initiatives be co-developed with local Aboriginal Communities to reflect Cultural approaches to health and wellbeing?

How have tobacco control measures correlated with a reduction in tobacco smoking?

To what extent are an individual’s motivation tendencies impacted by practice methods?

Analyse the most significant influences on health behaviours for young people

How effective are health promotion strategies in targeting 16-year-olds?

Analyse the sports that have the greatest cross-code potential.

### Research methods

It is important to remember that research methods exist on a continuum from quantitative to qualitative – that is, from methods that measure and quantify data, to those that collect detailed and less measurable and, therefore, less quantifiable data. Many methods contain aspects of both – that is, they include quantitative and qualitative elements.

**Quantitative** researchers collect data that can be measured, counted or quantified, resulting in a statistical report. The focus of quantitative research is *what?* and *how many?*

Examples of quantitative research methods include, but are not limited to:

experiment

statistical analysis

survey (closed questions)

review

observation

content analysis.

**Qualitative** researchers aim to gather an in-depth understanding of an issue by way of open-ended questioning, non-statistical research techniques, or value-based observations. A qualitative investigation focuses on *why?* and *how?*

Examples of qualitative research methods include, but are not limited to:

observation

individual interview

survey (open-ended questions)

focus group

content analysis.

#### Examples of research methods

Research methods may be used individually or in combination. Sample research methods may include:

content analysis, eg analysis of health promotion programs related to young people and gambling

individual interview, eg interviewing individuals from different cultures on their meanings of health

survey, eg surveying Year 11 students on the protective strategies they use in relation to issues affecting young people

focus group, eg social norms for different health behaviours

observation, eg observing junior athletes and their response to different types of feedback

focus groups/interviews, eg evaluating adaptive equipment for individuals with disability

surveys, eg investigating attitudes to physical activity in different groups

experiment, eg testing physical capacity in different athletic populations or testing the impact of different nutritional plans on the energy levels in the body

statistical analysis, eg analysing trends in possession in a sporting game and applying the data to a local team to enhance their performance.

#### Ethical considerations

Ethical considerations in research are a set of moral principles that guide research design and practices.

**Informed consent:** Participants in research must provide informed consent. They must understand what the research involves, including the purpose of the research, methods of data collection, and how the data will be used. When participants consent to the research, they must do so voluntarily.

**Privacy:** Participants involved in research have a right to privacy. This means keeping information confidential and their identity anonymous. For confidentiality to be maintained in the research process, the participant’s identity, personal information and responses should not be disclosed to anyone outside of the research team unless otherwise agreed upon. Anonymity can be protected by not referring to the participant’s identifiable characteristics in the research findings. To ensure the privacy of participant data, files collected should be stored safely and securely, with the personal identity removed as soon as possible.

The nature of some research methods such as focus groups will make it difficult to guarantee confidentiality. During the informed consent process the researcher will need to explain to participants to respect each other’s confidential information.

**Integrity:** The researcher must maintain integrity and trustworthiness in their conduct and of the data they produce. To do this, the researcher must keep complete and accurate records of all research, use reliable and valid research methods, present all findings honestly and accurately, maintain objectivity when conducting research, and where secondary sources are used, cite ownership appropriately.

**Respect:** The researcher must show respect for participants in their research. This includes voluntary participation and the right of the participant to change their mind and withdraw from the research at any time. Participants should be provided with any new information that might emerge in the process of research, which may affect their participation. Researchers must identify and assess potential risks of harm to their participants, including psychological, physical and social harm. This may be more evident in sensitive topics.

### Documenting the Collaborative Investigation

The Collaborative Investigation should be a product of the students’ own work. It should be free of plagiarism. It must adhere to the principles of good scholarship, as identified in the*HSC: All My Own Work* program.

#### Portfolio

The portfolio should include:

a research design, including an overview of the research methods

evidence of the sequential development of the research problem, eg the research question

a record of discussions with peers, teachers and other stakeholders

a record of major decisions of the investigation

cumulative self, peer and teacher reflection/evaluation of the inquiry

draft responses to the research question

personal statement of learning.

The portfolio may be an individual or group product. Teachers should monitor the portfolio at regular intervals. Suggested checkpoints have been indicated in the process table above.

### Presentation of findings

The presentation of findings in relation to the research question may be oral, written or multimodal. In a class or cohort, students are not required to present their findings using the same presentation mode. Some students with disability communicate using augmentative and alternative communication strategies. A student’s preferred mode of communication should be a consideration when presenting the findings of the Collaborative Investigation.

Student responses should be assessed against the appropriate outcomes.

The presentation should contain material from a range of perspectives, including the group's view. Methods of presentation could include:

#### Oral presentation

An oral presentation should include a summary of the findings of the research, with supporting evidence and the acknowledgement of sources.

#### Written presentation

A written presentation should include a summary of the findings of the research, with supporting evidence and the acknowledgement of sources. It may be accompanied by appropriate graphic texts; however, these should be included as appendices.

#### Multimodal presentation

A multimodal presentation should include a summary of the findings of the research, with supporting evidence and the acknowledgement of sources. A multimodal presentation uses 2 or more forms of communication, eg visual and written.

#### Reference list

The reference list should include a consistently formatted list of all sources used within the Collaborative Investigation. The sources should be selected for their value to the health or movement investigation.

The reference list should list each source, using an appropriate referencing style, eg Harvard, APA.