Year 11-12 Bridging work

This bridging work is to help you bridge the gap between GCSE PE or BTEC Sport and your Level 3 BTEC Sport Course.

Why do bridging work?

Preparation is crucial for studying Sport. After completing these exercises you will need to highlight any areas that you really had trouble understanding. We are expecting you to put 100% into these tasks to show your commitment to the course.

Is the bridging work assessed?

You will be asked to bring your bridging work to your interview for sixth form and to your first lesson. To be prepared for the course, you should buy a lever arch folder and dividers to help organise your notes. Please keep all the work you complete in this folder until then.

BTEC Sport Course details We study the BTEC Sport Extended Certificate which contains the following units:

Unit 1–Anatomy and Physiology – externally assessed

Unit 2–Fitness training and Programming – externally assessed

Unit 3–Professional Development in the sports industry - coursework

Unit 5–Fitness testing principles - coursework

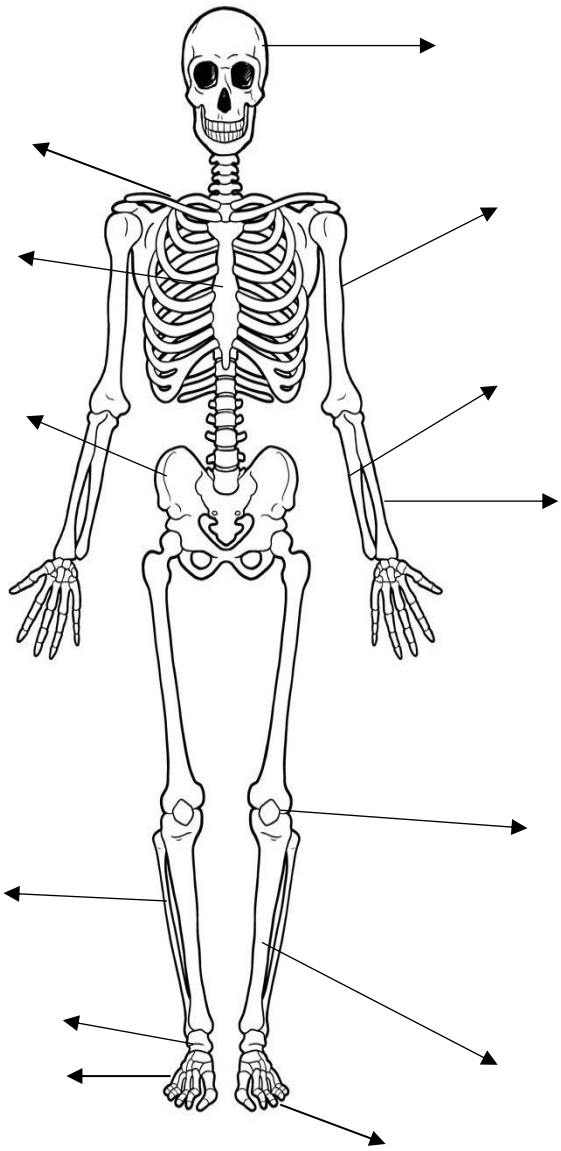
If you would like to find out more about the course the specification can be found out the following website: https://qualifications.pearson.com/en/qualifications/btec-nationals/sport-2016.html

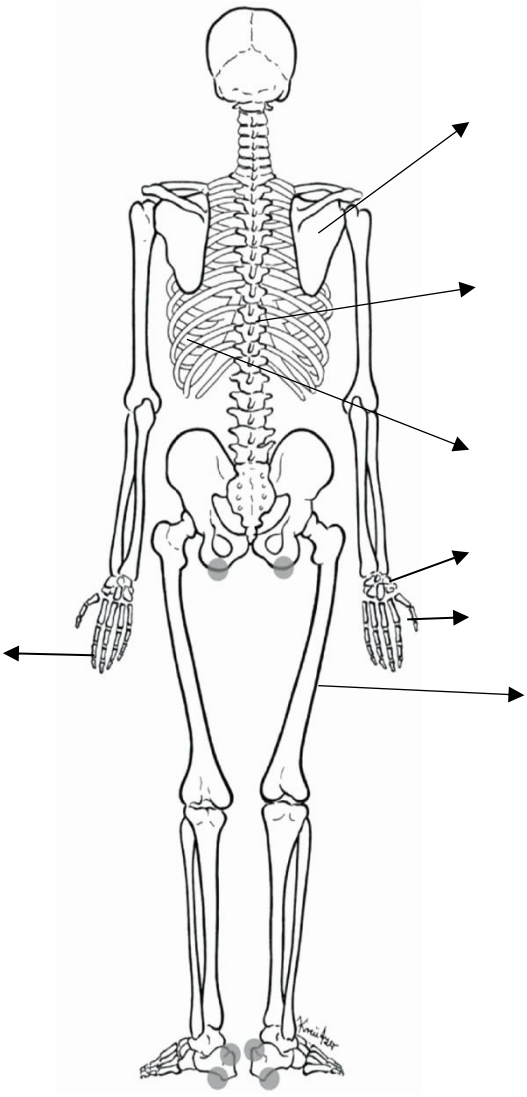
Within this course there are parts that will be familiar from GCSE PE and BTEC courses that you have studied in year 10 and 11. As with all parts of sixth form, this will require you to be extremely organised with your notes and also with your coursework. You will be expected to make notes on your work outside of lesson, to ensure you have learned the exam content and to complete all your homework and research tasks on time and with your best effort. This bridging work focuses on Unit 1 work which is externally examined but is also intended to help you develop and practice some of the independent learning skills that are required to be successful on this course. It also links with other units and is the basis of the information you will need to relate to different sporting examples that crop up in assessments.

Skeletal System

From the box below, label the diagram of the bones you need to know.

Cranium	Humerus	Ulna	Ribs	Tibia	Vertebrae	Scapula
Fibula	Femur	Radius	Sternum	Pelvis	Patella	Talus
Metatarsals	Tarsals	Metacarpals		Carpals	Clavicle	Phalanges (x2)





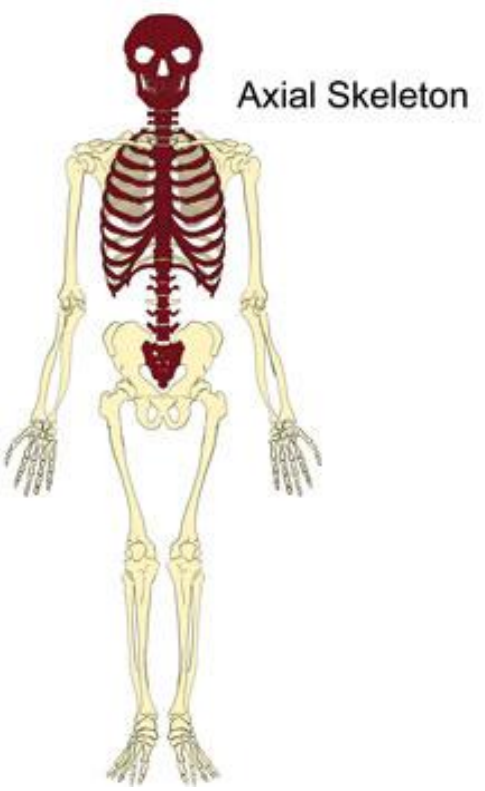
Different Types of bone

The skeleton is made up of bones of varying sizes and shapes. They are like this because they have different functions and jobs. Use the link below to help you complete the table about the types of bones.

https://www.visiblebody.com/learn/skeleton/types-of-bones

Bone Types	Appearance (draw)	Function	Examples
Long			
Short			
Irregular			
Flat			
Sesamoid			

Axial Skeleton



Axial Skeleton
The axial skeleton is the main core or axis of your skeleton and it consists of:

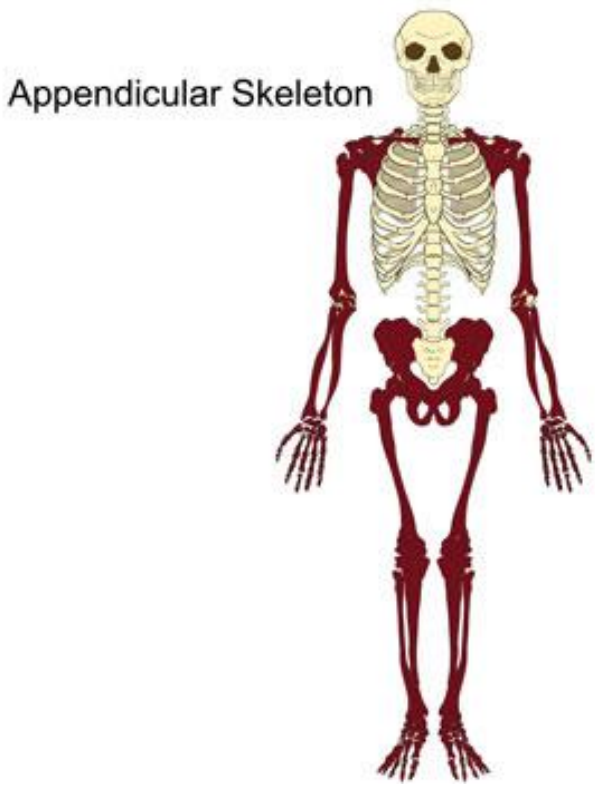
Cranium

Sternum

Ribs

V_____

Appendicular Skeleton



Appendicular Skeleton
The appendicular skeleton consists of bones that are attached to the axial skeleton such as:

Arms: humerus &

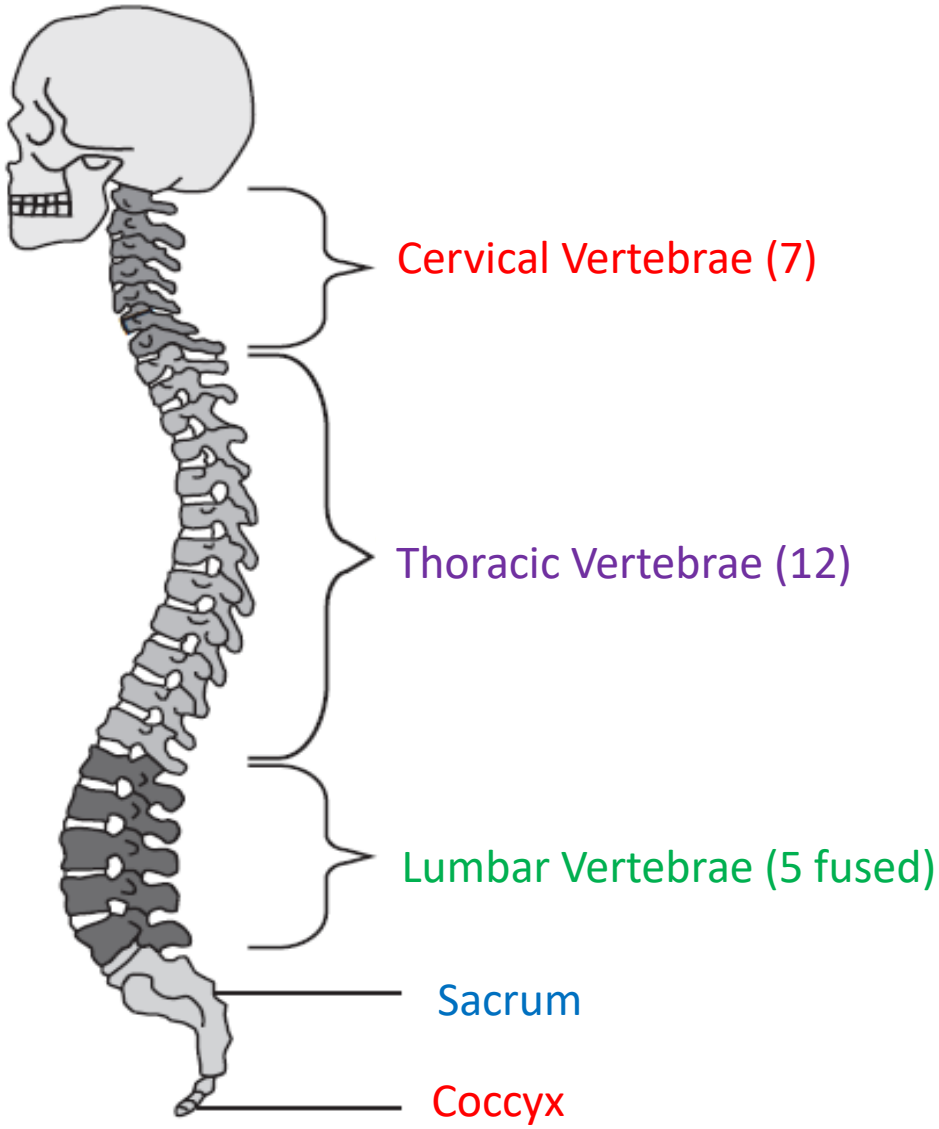
_____

_____

_____

_____

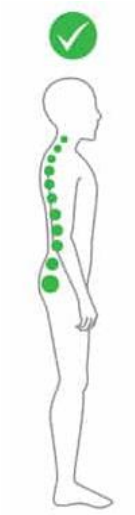
Vertebral Column



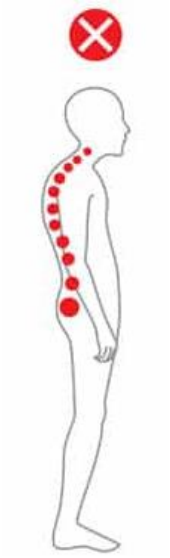
The vertebral column has many functions. It protects the spinal cord and supports the ribcage. The larger lumbar vertebrae support a large amount of body weight. The flatter thoracic vertebrae offer attachment for the large muscles of the back. These along with the inter-vertebral discs receive and distribute the impact, acting as a shock absorber in sports e.g. running and rugby

Postural Deviations

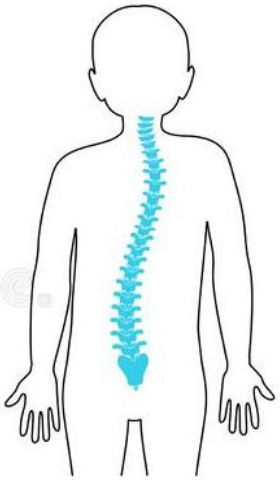
Neutral spine
Refers to good posture (as pictured on the left) it is completely vertical, with correct position of the three natural curves



Kyphosis
Refers to the excessive curve of the thoracic region of the spine resulting in a 'hunchback' appearance. Caused by bad posture

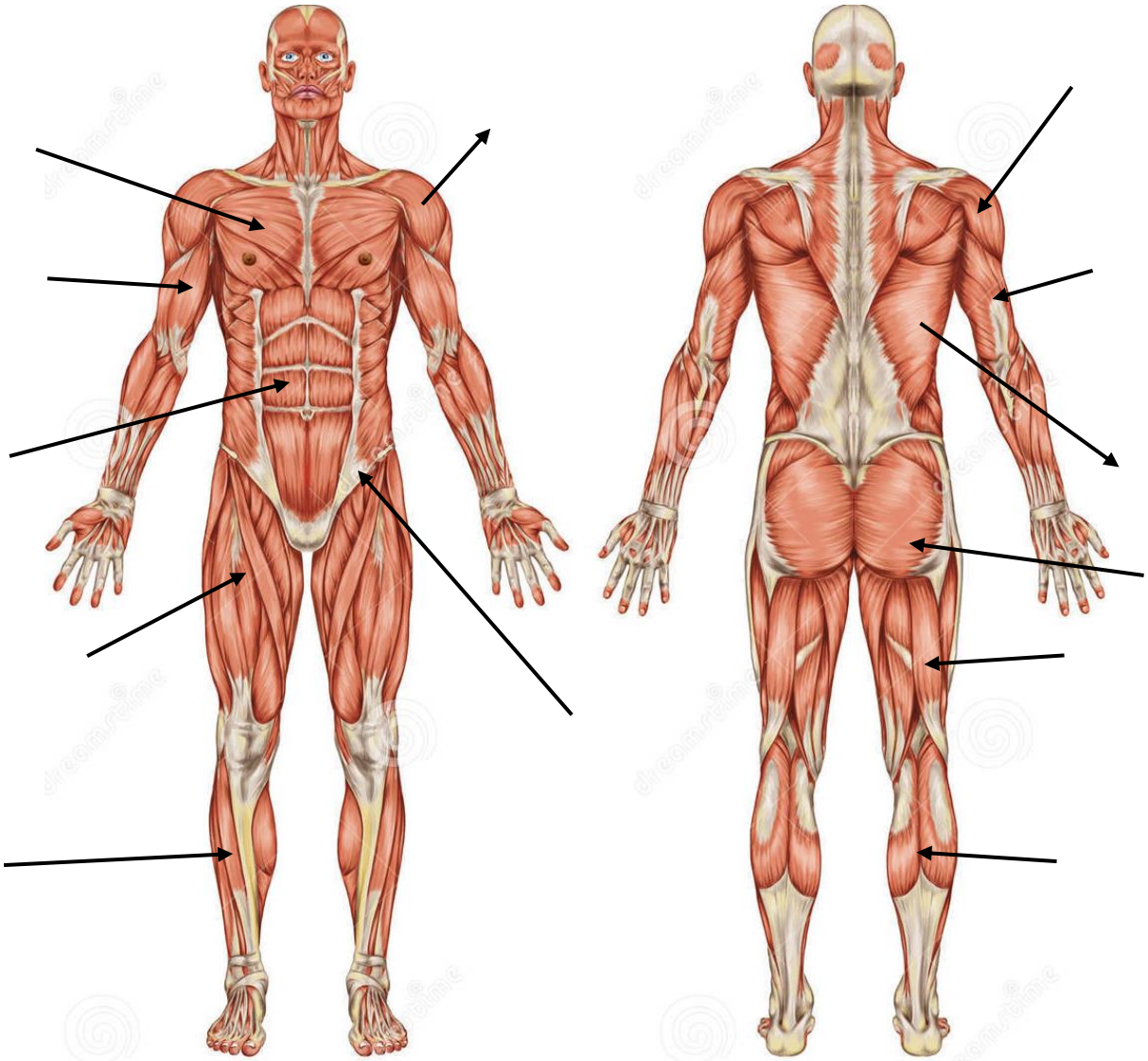


Scoliosis
Refers to the abnormal curvature of the spine either to the left or right (lateral)



Muscular System

Latissimus-dorsi	Deltoid	Rotator-cuffs	Pectorals	Biceps	Triceps	Abdominals
Hip-flexors	Gluteals	Hamstring	Quadriceps	Gastrocnemius		Tibialis-anterior.

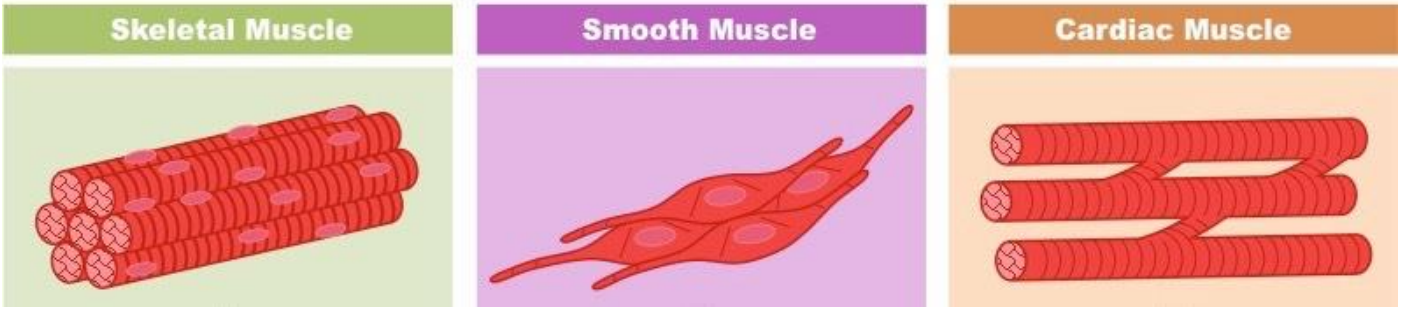


Characteristics and function of different types of muscles

Cardiac: found in the heart, involuntary, non fatiguing

Smooth: found in the digestive and urinary systems as well as in blood vessels, involuntary, slow contraction

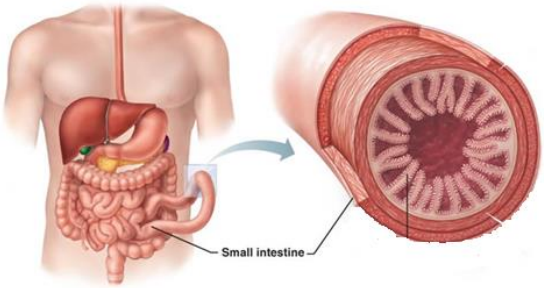
Skeletal: the rest of the muscles in the body, voluntary, fatiguing



Cardiac Muscle

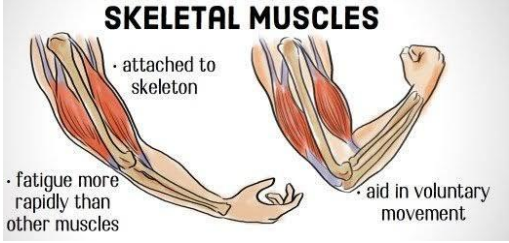
Cardiac muscle is found in the heart. It is **INVOLUNTARY** and it is also **NON FATIGUING**. This is so it can constantly contract and supply blood to working muscles and provide a stable oxygen supply to working muscles.

Smooth Muscle



Smooth muscle is **INVOLUNTARY** and it is found in the walls of the stomach, intestines, and blood vessels. It helps to regulate digestion and blood pressure.

Skeletal Muscle



Examples of skeletal muscles include the biceps, quadriceps and abdominals. Skeletal muscles are **VOLUNTARY** and they are under your control. This means the brain sends conscious signals to your muscles to perform any sporting actions. Skeletal muscles provide movement, strength, and power. They are attached to the skeleton. They are also responsible for maintaining posture and generating heat so you maintain a normal body temperature. One of the downsides of skeletal muscles are that it is **FATIGUING**. This means that they can get tired.

Bone Types	Appearance	Function	Picture	Example(s)
Long Bones	Longer Than They Are Wide	Mechanical Strength		Femur Tibia Fibula Humerus Ulna Radius
Short Bones	Cube-shaped	Multi-directional Motion		Carpal Bones (Of The Hands/Wrists) And The Tarsal Bones (Of The Feet/Ankles).
Flat Bones	Thin And Flat Has Large Surfaces For Muscle Attachments	Mechanical Protection to Soft Tissues Beneath		·Cranial Bones ·Sternum ·Ribs ·Scapulae
Irregular Bones	Complicated Shapes that cannot be Classified as "Long", "Short" or "Flat".	Provides Major Mechanical Support for the Body Vertebra Protects the Spinal Cord		·Vertebrae ·Hyoid Bone ·Sphenoid Bone ·Facial Bones.
Sesamoid Bones	Most Sesamoid Bones Are Un-named.	Protects From Additional Friction And Use - can form in Palms And Soles		Only One Type Of Sesamoid Bone Is Present In All Normal Human Skeletons So It Has A Name; The Patella.

Testing yourself

It's really important you can recall these bones quickly and accurately so practice learning their names and locations through the online games below

Online games Type in to google **'Anatomy Arcade'** and the website should pop up
http://anatomyarcade.com/index.html

This is a good website and offers lots of games and levels.

If this does not work try the link below as these are the best two games and try to get to level 3.

http://www.anatomyarcade.com/games/WAB/WAB.html
Whack a bone

Some interesting TED Talks

• Are athletes getting faster, better, stronger?
David Epstein: Are athletes really getting faster, better, stronger? |TED Talk

When you look at sporting achievements over the last decades, it seems like humans have gotten faster, better and stronger in nearly every way. Yet as David Epstein points out in this delightfully counter-intuitive talk, we might want to lay off the self-congratulation. Many factors are at play in shattering athletic records, and the development of our natural talents is just one of them

• How playing sports benefits your body and mind
Leah Lagos and Jaspal Ricky Singh: How playing sports benefits your body... and your brain | TED Talk

The victory of the underdog. The last minute penalty shot that wins the tournament. The training montage. Many people love to glorify victory on the field, cheer for teams, and play sports. But should we be obsessed with sports? Are sports as good for us as we make them out to be, or are they just a fun and entertaining pastime? Leah Lagos and Jaspal Ricky Singh show what science has to say on the matter.

• What open water swimming taught me about resilience?
Bhakti Sharma: What open water swimming taught me about resilience | TED Talk

Dive into the deep with open water swimmer Bhakti Sharma, as she shares what she learned about resilience during her personal journey from the scorching heat of Rajasthan, India to the bone-chilling waters of her record-breaking swim in Antarctica and her courageous crossing of the English Channel. "In the middle of the ocean, there is nowhere to hide," Sharma says.