**Sports Studies Transition Work**

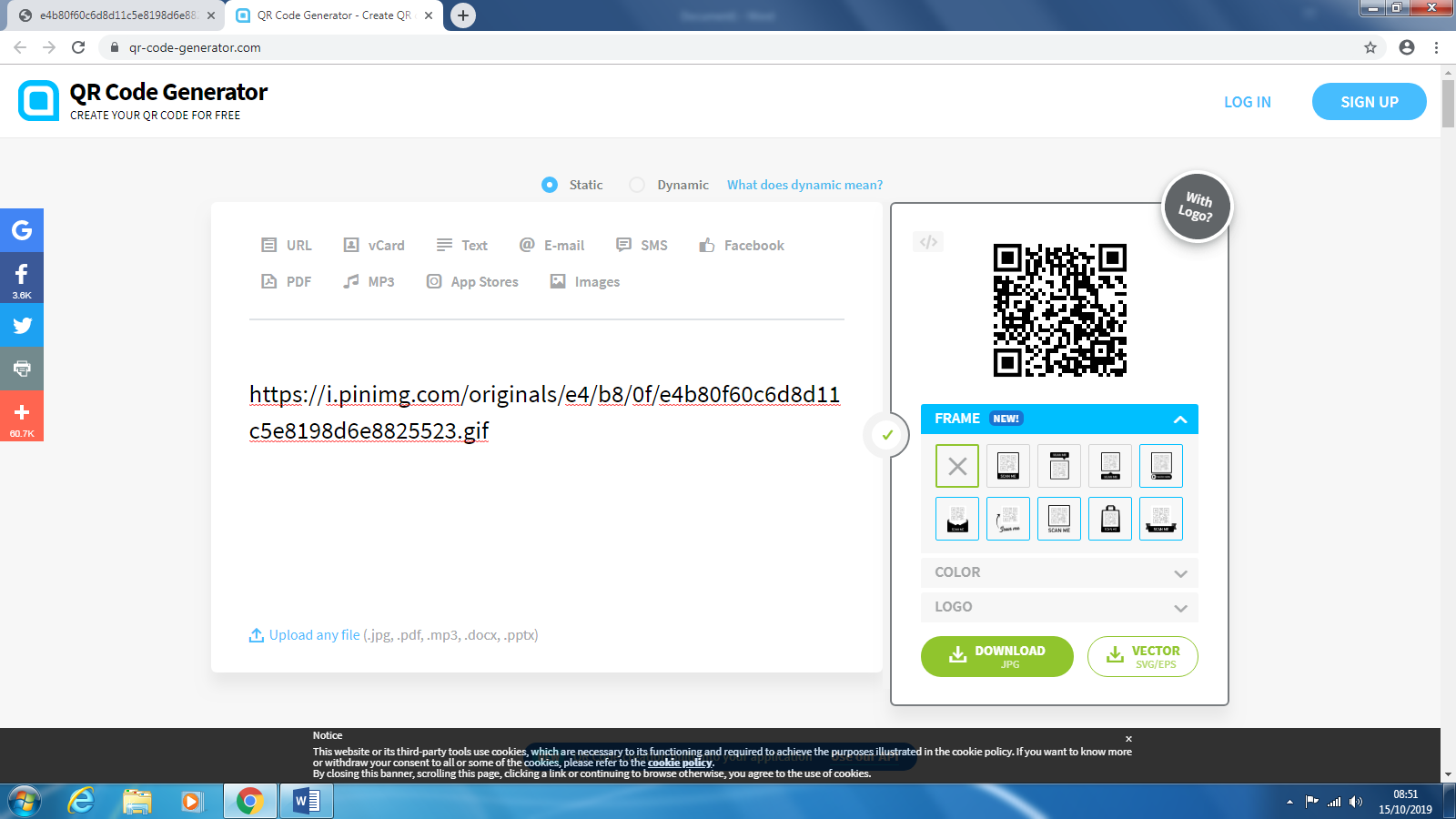
As well as working through the following booklet of information and PPT, please use the following links to access transition work and provide Mr Hunt ([rosco.hunt@st-maryshigh.herts.sch.uk](mailto:rosco.hunt@st-maryshigh.herts.sch.uk)) so that he can set up access to The Everlearner platform which provides excellent resources to help you get a head start.

<https://www.bbc.co.uk/bitesize/topics/zxq7j6f>

<https://www.youtube.com/watch?v=S-TE_3iYBCk&list=PLcdQDUUQX_4vcifsRu-iOyqZsxtlOsWxy>

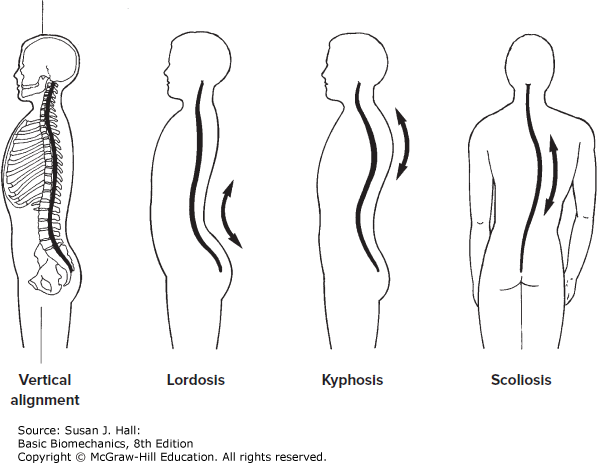
**The Spine**

On your Visual Guide, draw out an image of the spine. Label the **cervical**, **thoracic**, **lumbar**, **sacrum** and **coccyx** and make a note of how many **vertebrae** are per section.

Using a QR Code App, scan the following QR Code:

In relation to the GIF, answer the following questions:

* What is the **agonist** muscle in the dolphin kick? *(Hint – E\_\_\_\_\_ S\_\_\_\_\_)*
* Name two roles for the spine.
* Take a look at the structure of the vertebrae. What type of bone are they?
* What separates/sits between the vertebrae?
* Therefore, what type of joint is the spine? *(synovial/fixed/cartilaginous)*

**Factors Affecting the Spine**

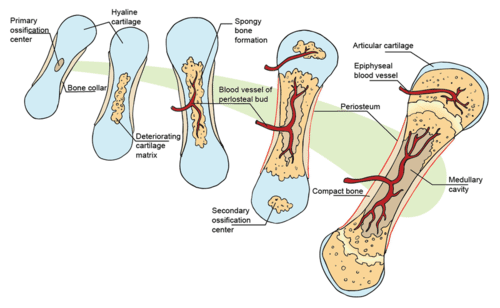
Draw the curvatures on your Visual Guide. Note down the name of each postural deviation.

**Considering the GIF, how would each postural deviation affect the swimmer?**

**Bone Health and Formation**

Take a moment to remind yourself and make a note of the following terms:

**Bone Remodelling, Ossification, Diaphysis, Epiphysis**

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You, the Coach

**You have been employed as a youth coach and are responsible for coaching under 12 academy footballers.**

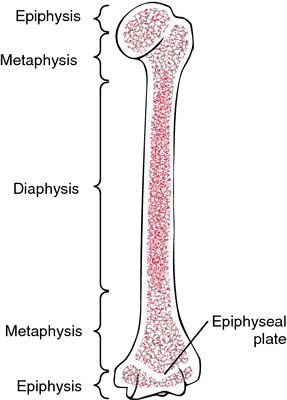
**Consideration 1: What types of training should you be cautious around, and why?**

**Consideration 2: A player previously broke his femur. Since then he has developed uneven length legs. Why might this be? What would you advise the player?**

|  |  |
| --- | --- |
| **Osteoblast** | **Osteoclast** |
| What is the role of an osteoblast? In what ways would it help a footballer? | What is the role of an osteoclast? How does it help the osteoblast? |



Get yourself over to Search for ‘Top 10 Dunks of The Decade’ *(Posted by NBA 7 months ago).* When you’re watching consider and make a note of the impact of exercise on the **SKELETAL SYSTEM.** Use the below visual organiser to help you remember



Ca

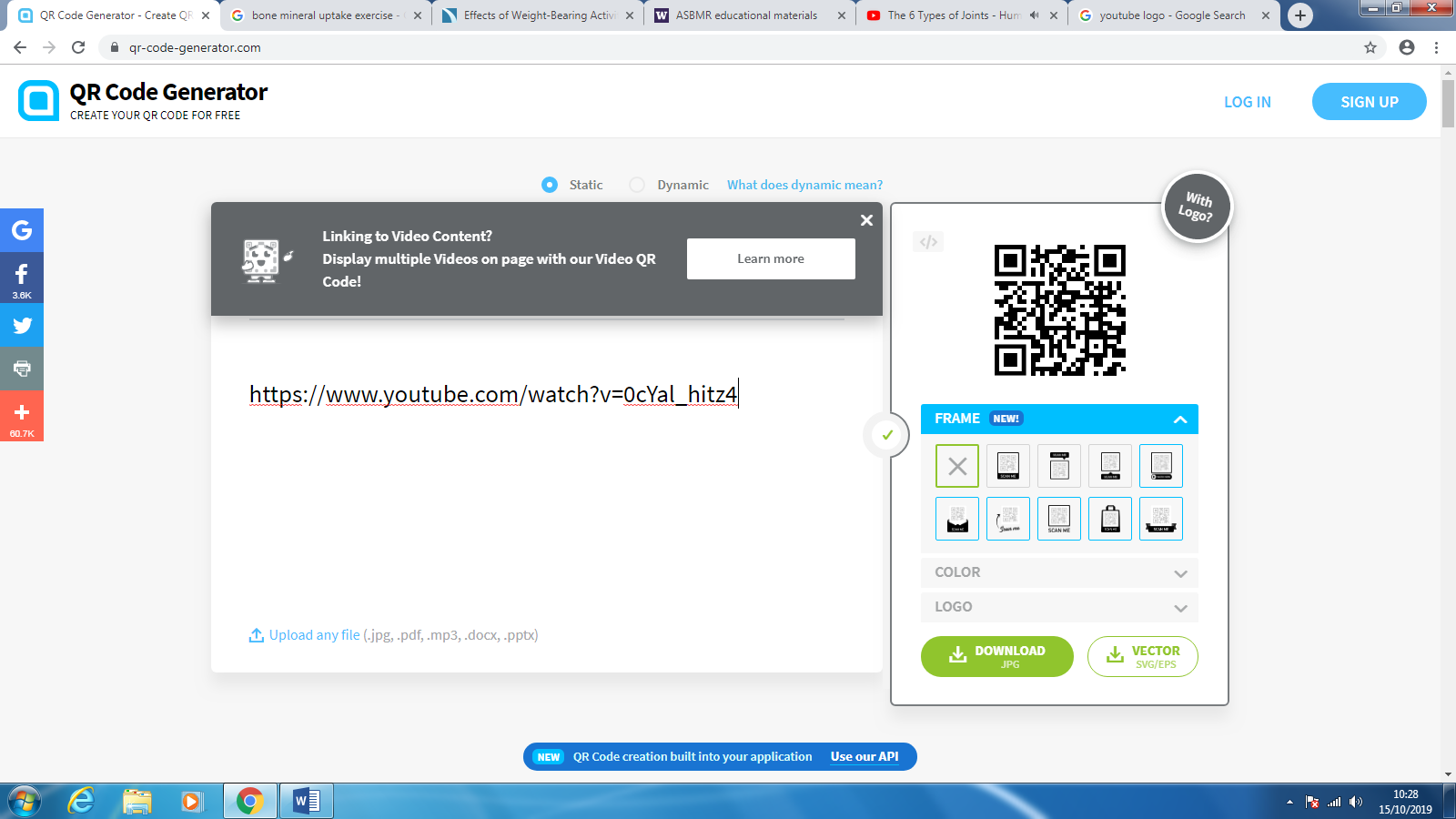
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**Joints**

Create a rendition of a lunge where **all** ranges of movement occur:

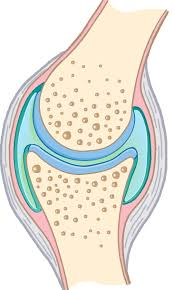
**Adduction, abduction, flexion, extension, hyperextension, lateral flexion, plantarflexion, dorsiflexion, rotation, circumduction, horizontal adduction/abduction.**

**Record and narrate your lunges with the types of movement and send them on an email to me.**



**Types of synovial joints**

Scan the QR Code and draw out types of joints on your Visual Guide. **Give an example of when it would be used in a sporting context**. (Note: an ellipsoid joint is a condyloid joint)

 **Synovial Joint**

Draw out the synovial joint on your Visual Guide and note down the function of the following:

***Bursa, Cartilage, Synovial Membrane, Synovial Fluid, Joint Capsule***

You, the Coach

*You have been recruited as an U23 PL Club* ***physiotherapist****. Some senior players have returned from* ***injury****. Explain to the players why* ***warming-up*** *is important for the* ***synovial joints*** *and how it will help their* ***performance*** *and* ***recovery****.*

**Muscles**

|  |  |
| --- | --- |
| **Android** users - Download the app ‘Yourbody AR’. Aim it at the marker sheet. | **Apple** users – Download the app 'BioDigital Human 2019’. Explore the Muscular System |

* Using the apps above, break the body down in to four parts on your Visual Guide sheet: **Arms**, **Legs**, **Anterior** (front), and **Posterior** (back).
* Give an example of **one** **sporting** **action** that uses that part identifying the following:
  + **Agonist**, **antagonist**, **fixator**, **synergist**

**Fibre Types**

|  |  |  |
| --- | --- | --- |
| **Kipchoge** | **Highlanders v Chiefs** | **Eddie Hall** |
|  |  |  |
| Watch each of these videos and make a note of the dominant fibre type for each sport. What are the characteristics of the fibre type: fuel/energy source, size, duration, intensity, and recovery? | | |

 **Creating the Perfect Team**

Using whatever formation you want, assign muscle **fibre** **types** to each position of your perfectly fit football team. Feel free to add percentages for each position*. For example, 30% Type 1, 60% Type 2a, 10% Type 2x.*

**Considerations when making decisions:** Movements of the position, intensity of actions, recovery time, long-term adaptations

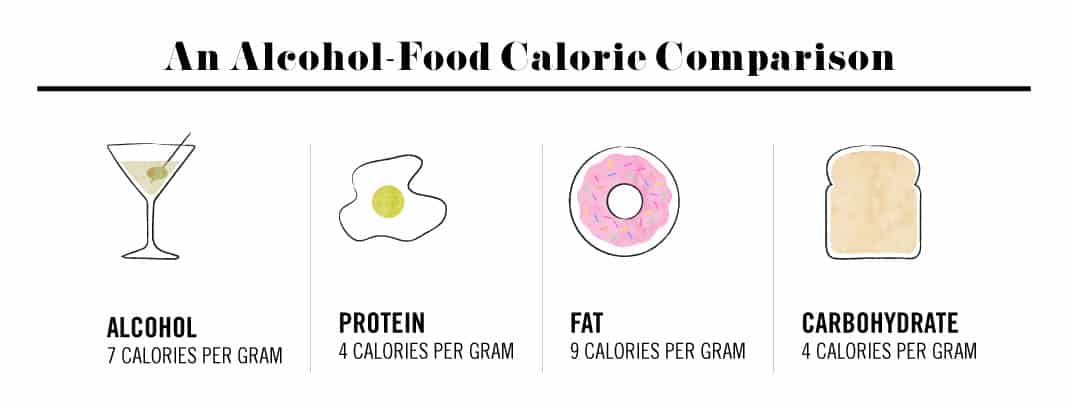
**Muscles in Action**

Perform a wall hold. On your Visual Guide draw this out and make a note of the **type of contraction**. What is the **waste** **product** building up? What would the **long**-**term** **adaptation** be to this type of training?



Next, perform **super** **slow** press-ups. Take 8 seconds going down slowly and 1 second up. Do 6 reps (why 6?). Draw this out on your Visual Guide, noting the **type** **of** **contraction**. What would be a **short**-**term** effect of this type of training and **why**? What would be the **long**-**term** **adaptation** of this type of training?

**Energy usage and adaptations**



Take a look at the amount of calories per gram above. Which **macronutrient** would help an athlete **last longer** in their sport and why? With that in mind answer the following– **true or false: a long-term adaptation to exercise is increase in storage and use of fats.**

You, the S&C Coach

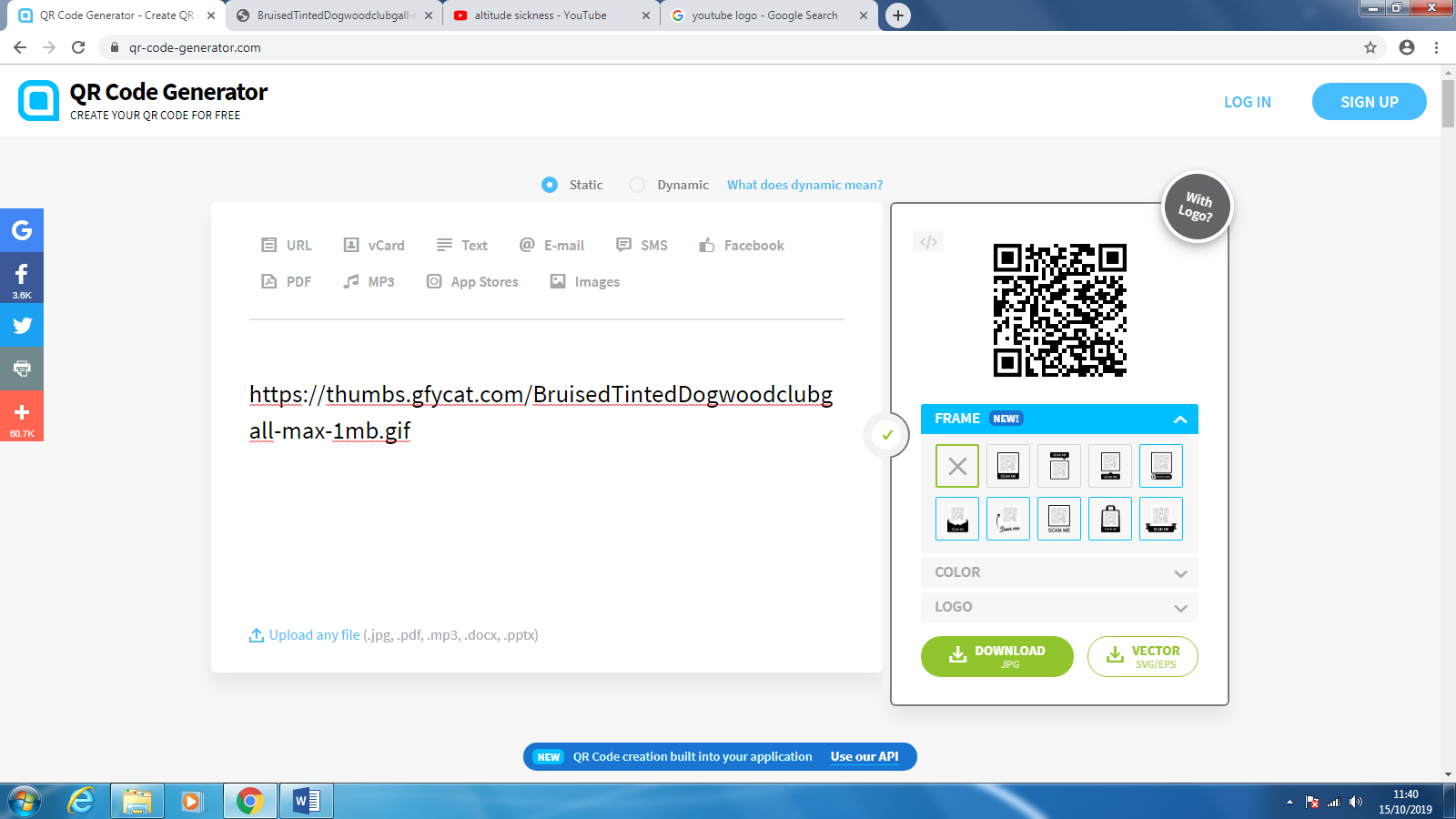
**What are the long-term muscular adaptations for each of these athletes?**

**Respiratory System**



**Get on to Search for ‘How Altitude Works’**

**On your Visual Guide, draw a mountain and note down the adaptation to altitude training.**



Using your newly found knowledge scan the **QR code** and explain the effect of exercise and altitude training on the **RESPIRATORY** **MUSCLES** >>>>>>>>>>

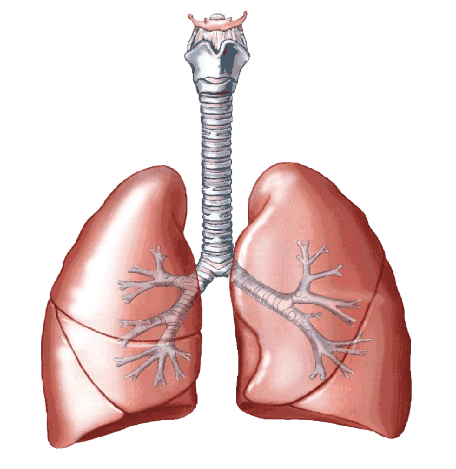
In the last World Cup, **Golovin** averaged **12.6km** per game. What **respiratory** adaptations has he benefitted from that allows him to complete such great distance per game?



*My favourite thing for breakfast is a yo-yo test*

However, C-Ron peaked the top speed for the tournament at **34 km/h**. Linking in to **Lung** **Volumes**, what changes would we observe with Ronaldo. Also, y tho?

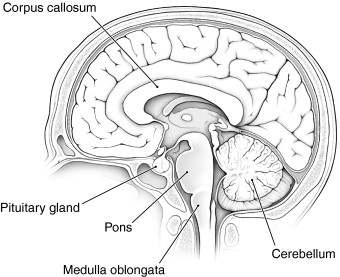
**The Structure of the Respiratory System**

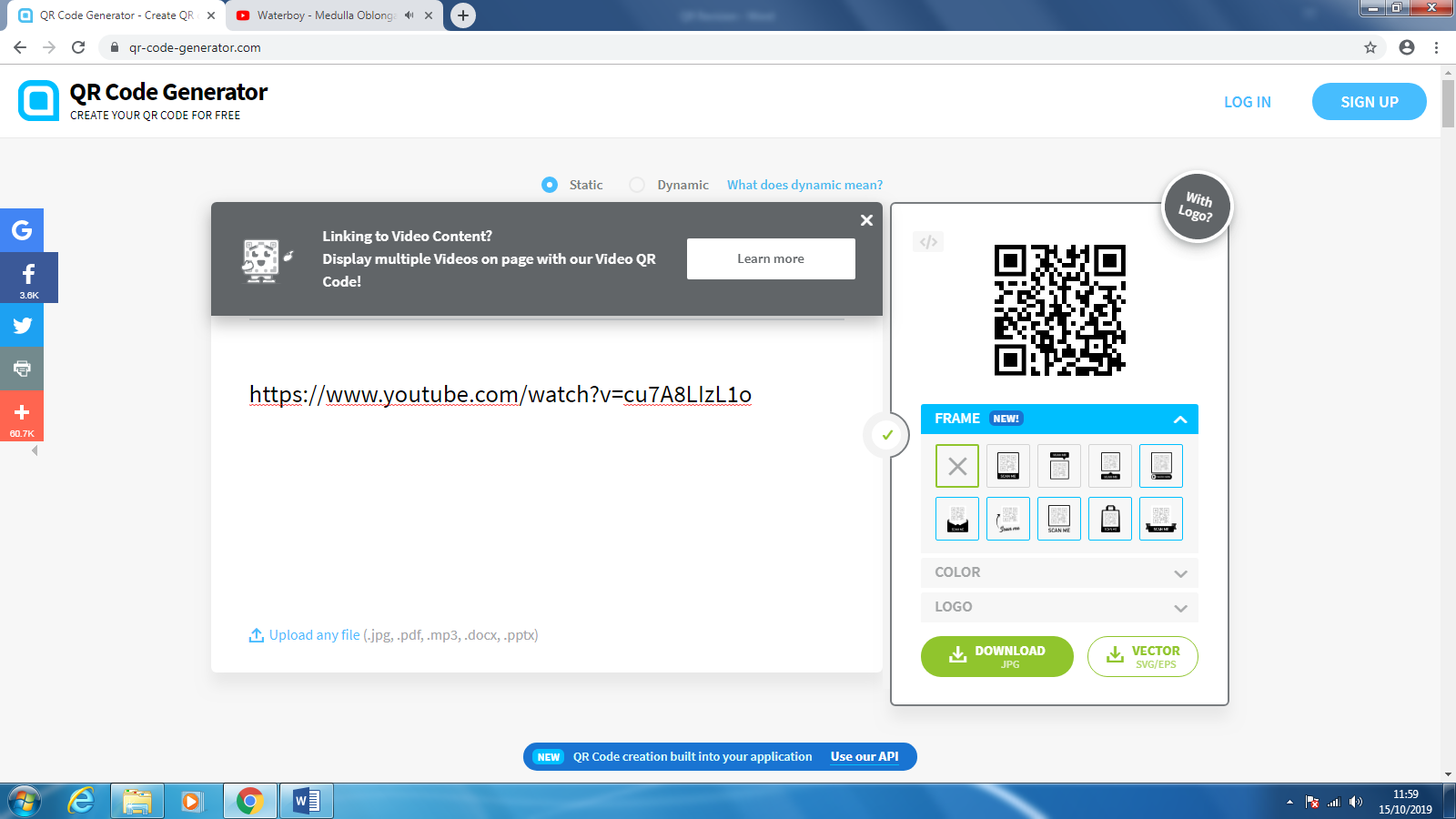


**Akinfenwa looks confused at the structure of his respiratory system. Create a STORY of the passage of air as you inhale and expire the air back in to the atmosphere.**

**Akinfenwa likes creativity. BE CREATIVE**

Note: Akinfenwa likes muscles. Be sure to tell him all about the **RESPIRATORY** **MUSCLES** involved in breathing too and how they work with inspiration and expiration.



The **Medulla** **Oblongata** is responsible for controlling our breathing and communicatess with **chemoreceptors** in our **carotid** **arteries** and **aortic** **arch.**

**On your Visual Guide, identify where the carotid artery and aortic arch is, explaining the signal they send and the overall effect on breathing**