 Province of the

EASTERN CAPE

EDUCATION

**DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)**

**HOME SCHOOLING SELF-STUDY WORKSHEET MEMO**

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| --- | --- | --- | --- | --- | --- |
| **SUBJECT** | LIFE SCIENCES | **GRADE** | 12 | **DATE** | 2June 2020 |
| **TOPIC** | RESPONDING TO THE ENVIRONMENT: EAR FUNCTION,HEARING AND BALANCE |  |  | **TERM 2 CONTENT** | 🗸 |
| **TIME ALLOCATION** | 50 minutes | **TIPS TO KEEP HEALTHY**  1. **WASH YOUR HANDS** thoroughly with soap and water for at least 20 seconds. Alternatively, use hand sanitizer with an alcohol content of at least 60%.  2. **PRACTICE SOCIAL DISTANCING** – keep a distance of 1m away from other people.  3. **PRACTISE GOOD RESPIRATORY HYGIENE**: cough or sneeze into your elbow or tissue and dispose of the tissue immediately after use.  4. **TRY NOT TO TOUCH YOUR FACE.** The virus can be transferred from your hands to your nose, mouth and eyes. It can then enter your body and make you sick.  5. **STAY AT HOME.** | | | |
| **INSTRUCTIONS** | Use Mind The Gap Study Guide and read:  Study the notes provided with this lesson  Answer the questions on the Worksheets below |

|  |  |  |
| --- | --- | --- |
| 1.1 | Both A and B**✓✓** | (2) |
| 1.2 | B only**✓✓** | (2) |
| 1.3 | B only**✓✓** | (2) |
| 1.4 | Both A and B**✓✓** | (2) |
|  |  | **(8)** |
| 2.1 | A Cristae**✓**  B maculae**✓** | (2) |
|  |  |  |
| 2.2 | (a) cerebellum**✓**  (b) cerebellum**✓** | (2) |
| 2.3 |  |  |
|  | 1. The body will not be able to detect changes in speed and direction of the body**✓**   Cristae will not be stimulated**✓**  No impulse transmitted to the cerebellum**✓**  Balance and equilibrium will not be restored when the person suddenly changes speed and direction**✓/**person may fall | (4) |
|  | 1. The body will not be able to detect changes in the position of the head**✓**   Maculae will not be stimulated**✓**  Impulse will not be transmitted to cerebellum**✓**  Cerebellum will not restore balance when head position changes**✓** person may fall over | (4) |
|  |  |  |
|  | (c) Impulse will not be transmitted to the cerebellum**✓**  Cerebellum will not restore balance **✓**when head position changes**✓**and when there is a sudden change in speed and direction**✓**. | (4) |
|  |  |  |
| 3 |  |  |
| 3.1 | It is a membrane**✓** and is able to bulge outwards when the oval window bulges inwards**✓** thus creating movement of the endolymph**✓**  It absorbs pressure waves from the cochlea**✓**into the middle ear  Thus preventing distortion of incoming sound waves**✓ (any three)** | (3) |
| 3.2 | Tympanic membrane / part E will not vibrate**✓**  Vibrations will not be passed to the middle ear**✓**  Ossicles will also not vibrate**✓**  Vibrations will not be passed to the oval window**✓**  No pressure waves will be generated in the cochlea**✓** | (5) |
| 3.3 | Semi-circular canals detect any sudden speed in change and direction **✓**  The endolymph in all three semicircular canals moves**✓** stimulating cristae**✓**  Since the impulses from different cristae will reach the cerebellum in quick succession**✓**  There will be a delayed response**✓** to the sudden change in speed and direction**✓**, leading to temporal dizziness**✓** | (4) |
| 3.5 | Pressure waves are generated in the cochlea, **✓**  Perilymph vibrates causing the endolymph to also vibrate**✓**  Organs of Corti **✓** stimulated to form an impulse**✓**  Impulse transmitted by auditory nerve**✓** to cerebrum **✓** for interpretation of sound then hearing occurs**✓** | (4) |
|  |  | **(16)** |
|  |  | **40** |