**Science Home learning**

**Lesson Title: Organisation 13 Year:**

Topic: Organisation Unit: **Biology**

Date Set:

Information to read / watch:

https://classroom.thenational.academy/lessons/cancer-c8rp8dApplication:

Please see the exam-style questions that accompany this sheet. You must complete the questions and then self-assess using the mark scheme that has been provided.

Additional Websites:

<https://www.youtube.com/watch?v=VO2QkpwAG9o>

<https://www.youtube.com/watch?v=3CFsOAybTO8>

**Organisation – Lesson 13 M.E. Time Task**

***Objective: Students should be able to describe cancer as the result of changes in cells that lead to uncontrolled growth and division.***

***Objective: Students should be able to describe Benign, Malignant & Secondary tumours.***

**Task 1:**

When an organism grows, new cells are produced by cell division.

(a)     What type of cell division happens to produce new body cells?

Tick **one** box.

|  |  |
| --- | --- |
| Differentiation |  |
| Meiosis |  |
| Mitosis |  |

**(1)**

(b)     Why can cancers grow very large? Tick **one** box.

|  |  |
| --- | --- |
| Cancer cells are specialised |  |
| Cell division is slow |  |
| Cell division is uncontrolled |  |

**(1)**

(c) The number of people in the UK with tumours is increasing.

    (i)      Describe how tumours form.

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**(1)**

(ii)     Tumours can be malignant or benign.

What is the difference between a malignant tumour and a benign tumour?

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**(1)**

(iii)     Describe how some tumours may spread to other parts of the body.

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**(2)**

***Objective: Students should be able to identify risk factors for various types of cancer.***

**Task 2:**

(a)     Give 3 factors which increase the risk of getting cancer.

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**(3)**

(b)     Survival rates for people with cancer have improved a lot.

People who are alive 10 years after diagnosis are usually considered to be cured.

The figure below shows data for people diagnosed with cancer in 1961 and 2001.



      78% of people diagnosed with breast cancer in 2001 were alive 10 years later.

 **Complete the figure above** to show this information. **(1)**

(c)     Which type of cancer diagnosed in 1961 had the highest survival rate? Tick **one** box.

|  |  |
| --- | --- |
| Breast |  |
| Prostate |  |
| Skin |  |
| Testicular |  |

**(1)**

(d)     Which type of cancer shows the biggest improvement in the percentage of people alive after 10 years? Tick **one** box.

|  |  |
| --- | --- |
| Breast |  |
| Prostate |  |
| Skin |  |
| Testicular |  |

**(1)**

(g)     Suggest **two** reasons why the survival rates for all cancers have increased.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**(2)**

Mark schemes

**Task 1:**

(a)     mitosis

*extra box ticked negates mark*

**1**

(b)     cell division is uncontrolled

*extra box ticked negates mark*

**1**

(c)     (i)      (as a result of) uncontrolled / abnormal growth / division of cells

*ignore mutation*

*allow cells dividing with no contact inhibition*

**1**

(ii)     benign tumours do not invade / spread to other tissues / do not form secondary tumours

*accept converse for malignant*

*accept benign tumours do not metastasise*

**1**

 (iii)    cells can break off

*allow cells invade other tissues*

**1**

travel in blood

*accept travel in lymph (fluid)*

**1**

**Task 2:**

(a)     any **three** from:

* smoking / tar
* alcohol
* carcinogens
* *allow named chemical*
* viruses (living in cells)
* Genes (genetic)
* (ionising) radiation
* *accept UV / X-rays / gamma waves*

**1**

(d)     bar plotted at 78%

*ignore width of bar*

**1**

(e)     testicular

*extra box ticked negates mark*

**1**

(f)     prostate

*extra box ticked negates mark*

**1**

(g)     any **two** from:

•        improved treatment / drugs

•        earlier diagnosis

•        more cancer screening

•        improved patient knowledge (of risk factors)

*allow improved patient diet / lifestyle*

**2**