



Workbook: Background Radiation

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Q1 Tick any of the following statements that are true.

- Radon gas is given off by rocks such as granite.
- Exposure to radon gas increases the risk of getting lung cancer.
- Scientists are sure that radon gas is only dangerous at high levels of concentration.
- If you live where there is a lot of radon gas, there is nothing you can do about it.
- The risk from radon gas is the same whether you smoke or not.

Q2 List five sources of background radiation.

Cosmic rays - air - rocks - food - building material - fallout - nuclear waste - medical treatments such as X rays etc.

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Q3 Peter did an experiment to compare equal quantities of two radioactive materials. Here are his results and conclusion.

Material tested	Radiation measured (counts per second)
None	50
Material A	200
Material B	400

CONCLUSION
"Both materials are radioactive. Material B is twice as radioactive as Material A."

a) Is Peter's conclusion correct? Give a reason for your answer.

They are both radioactive but if he took into account the background count A would be 150Bq and B 350Bq so they are not related by that simple ratio.

b) What other conclusion could Peter have drawn?

Material B is 2.33 times as radioactive as material A.

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Q4 Radon gas building up in people's houses is a problem.

a) Explain why it's a problem.

It can cause cancer as it is a radioactive gas

b) Why is the level of radon gas in homes different in different parts of the country?

Radon is given out from certain rocks (e.g. granite) so the sub structure of the land you are living on affects the radon in your area.

c) What can be done to reduce the problem caused by radon gas in homes?

All new houses in problem areas should have radon monitors fitted and have good ventilation to remove the radon from the house so the risk is less.

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