A.K.A. Carbon (6.8)

Diamonds
Graphite   these are all 100% pure carbon, yet they look and act very differently!
Charcoal

Diamond is much harder than graphite which is much harder than charcoal!

Diamonds are clear and sparkly whereas graphite in your pencil and charcoal brickettes in a BBQ are dark and not sparkly.

What is making the difference? It is the structure of how the carbon atoms are put together.

Let's compare

Form of carbon	Structure of carbon atoms	Use	Why it's good for that use
Charcoal	No definite structure - Soft	Charcoal briquettes that burn (fuel)	Soft (can break up charcoal chunks) Flammable!
Graphite	Organized/definite structure Carbon atoms join in hexagon shapes in sheets	Pencil 'leads'	Sheets of carbon slide off each other and stay on paper as you press and write!
diamond	3D connections Connect in triangular shapes	Jewellery End of drill bits that drill into hard rock	Lasts!! Jewellery doesn't wear away Doesn't get dulled easily when drilling into hard rock. Can actually drill through rock!

Canadian Diamond Mining

Diamonds have been mined in the Canadian far north since 1980"s. Canadian diamond mines represent over 15% of all diamonds mined world-wide!
There are some benefits (good things) about Canadian diamond mining and some costs (not good things).

Benefits (good things)	Costs (not just $$ costs – negative things)
- Less negative impact than gold mining that requires toxic cyanide - brings jobs to area – mining jobs, transportation jobs & construction job. (lots!) **Economic** - Towns get bigger **Social**	- destroys/damages rivers/lakes (& aquatic life), destroys permafrost and removes topsoil. Hard on food webs **environmental** - cost of living goes way up **social** - smaller towns have people leaving and harder to attract families/businesses **social** So less money in community **economic**

Environmental impact – affects the environment
Social impact – affects people and how they live
Economic – affects the $ in the area / businesses / jobs