

Title: Aggregate Terms and Definitions



NOTES:

- the definitions are not intended to be technical but to help the students acquire a working knowledge of aggregate terms and practices.
- Do only as many of these activities as you have time for. The most important thing is the memorizing practice not how many aggregate terms the students actually acquire

Materials needed: aggregate word list/aggregate word blank/
matching quiz/agg cards

Activity 10: Aggregate definitions ... 1 hour or 2 hours

- students match the definitions with the term: alone/pairs/groups.
- make it a contest ... timed/prizes/most correct
- students in rows come up one at a time to match one term with the definition - have word card in hand or cards are sitting on a desk at the front of the row of students to be seen when student comes to the front for their turn
- allow time to review terms and quiz a partner before doing a contest
- run off cards and definitions onto light tag paper so students can cut them out
- If you run the definitions on the back of terms, they can be flash cards

Activity 11: Aggregate Story Words - fill in the blank ... 1 hour

- using definition sheet, students fill in the blanks with the proper term to tell the story of aggregates
- homework - permits parents to see the depth of detail and educates them about aggregates
- alone/partner

Activity 12: Aggregate Matching Words Quiz ... 10 minutes

- use as a test of knowledge
- put the letter from the left of the term into the empty box on the right of the definition

Title: Aggregate Word Definitions List Activity 10

Materials needed: aggregate word definition list

AGGREGATE: sand, gravel and crushed rock

AGLIME: crushed limestone - used for growing things

ARCHEOLOGY: looking for the remains of people long ago ie First Nations people

ASPHALT: Is produced when gravel is mixed with hot petroleum tar. Pavement for roads

BARGE: A flat bottom boat used to haul aggregate down a river or across a lake or ocean.

BIRDSEYE or PEAGRAVEL: Small washed stones used for playground safety.

CEMENT: Mixed with gravel and water to form concrete.

CONCRETE: Made from gravel, cement and water.

CONVEYOR: Moves aggregate along a moving belt from one place to another usually within a pit or across/under a road or stream

CRUSHED ROCK: Large rocks broken into smaller pieces. Has sharp edges

DRAINAGE: How well water moves away from a building. Gravel is used to improve drainage.

DUST: Produced from crushing rocks and trucks driving on it when it is dry.

ENGINESAND: Dropped on the train tracks when slippery to give the engine wheels traction.

ENVIRONMENT: The natural area surrounding a gravel pit.

EXTRACTION: To remove gravel from the ground usually with loaders or big shovels

GRAVEL: Small rocks used in construction, roads and drainage.

GYPSUM: A crushed rock material used to make wallboard and medicines.

IMPACT: How something is affected ie the streams near a gravel pit.

JAWCRUSHER: A large machine which crushes stones into smaller stones.

LIMESTONE: Crushed rock which is an important part of concrete and used to clean air or water.

MINE: What we call a large gravel pit operation.

NOISE: Trucks/crushing equipment can bother neighbours if close to them.

PERMIT: When the Ministry of Energy and Mines approves a mine, they issue a permit or license to start up.

PIT: The large hole where gravel is taken out.

POLLUTION: Produced by gravel trucks especially when gravel must be hauled from farther away.

PROFIT: The price paid for gravel minus the cost of producing it.

RECLAMATION: To turn an old gravel pit into something useful again like a park or lake.

RESERVES: Gravel deposits that are known but not dug up yet.

ROADBASE: Gravel used to build up the layers of a road.

SAFETY: To protect yourself by wearing a hard hat/reflective vest in a gravel pit.

SAND: Used in concrete, lawns and to make glass.

SCREEN: Big sheets of mesh which separate large from smaller rocks.

SEAM: When gravel or sand occurs in a long band surrounded by other material.

TAXES: The money the city/government collects from you to pay for services. Taxes are much larger if gravel must be hauled from farther away.

TRUCKS: Used to haul gravel when barges and trains are not available.

WASHED: What we call rocks when they are cleaned with water.

AQUIFER: Underground water which might be damaged by a poorly planned gravel pit.


AGGREGATE	sand, gravel and crushed rock
AGLIME	crushed limestone - used for growing things
ARCHEOLOGY	looking for the remains of people long ago ie First Nations people
LIMESTONE	Crushed rock which is an important part of concrete and used to clean air or water.
MINE	What we call a large gravel pit operation.
NOISE	Trucks/crushing equipment can bother neighbors if close to them.
ASPHALT:	Is produced when gravel is mixed with hot petroleum tar. Pavement for roads
BARGE:	A flat bottom boat used to haul aggregate on water.
BIRDSEYE or PEAGRAVEL:	Small washed stones used for playground safety.
CEMENT:	Mixed with gravel and water to form concrete.

CONCRETE:	Made from gravel, cement and water.
CONVEYOR:	Moves aggregate along a moving belt from one place to another usually within a pit or across/under a road or stream
CRUSHED ROCK:	Large rocks broken into smaller pieces. Has sharp edges.
DRAINAGE:	How well water moves away from a building. Gravel is used to improve drainage.
DUST:	Produced from crushing rocks and trucks driving on dirt when it is dry
ENGINESAND:	Dropped on the train tracks when slippery to give the engine wheels traction.
ENVIRONMENT:	The air, water & soil surrounding a gravel pit.
EXTRACTION:	To remove gravel from the ground usually with loaders or big shovels
GRAVEL:	Small rocks used in construction, roads and drainage.

GYPSUM:	A crushed rock material used to make wallboard and medicines.
IMPACT:	How something is affected ie the streams near a gravel pit.
JAWCRUSHER	A large machine which crushes stones into smaller stones
LIMESTONE	Crushed rock which is an important part of concrete and used to clean air or water.
MINE	What we call a large gravel pit operation.
NOISE	Trucks/crushing equipment can bother neighbors if close to them
PERMIT	When the Ministry of Energy and Mines approves a mine, they issue a permit or license to start up.
PIT:	The large hole where a gravel is taken out.
POLLUTION:	Produced by gravel trucks especially when gravel must be hauled from farther away.

PROFIT	The price paid for gravel minus the cost of producing it.
RECLAMATION:	To turn an old gravel pit into something useful again like a park or lake.
JAWCRUSHER	A large machine which crushes stones into smaller stones
RESERVES:	Gravel deposits that are known but not dug up.
ROADBASE:	Gravel used to build up the layers of a road.
SAFETY:	To protect yourself by wearing a hard hat/reflective vest in a gravel pit.
SAND:	Used in concrete, lawns and to make glass.
SEAM:	When gravel or sand occurs in a long band surrounded by other material.
TAXES:	Money the city/gov't collects from you to pay for services. Taxes are larger if gravel is hauled farther.

TRUCKS:	Used to haul gravel when barges and trains are not available
WASHED:	What we call rocks when they are cleaned with water.
GROUNDWATER:	Underground water which might be damaged by a poorly planned gravel pit.



Students will fill in the blanks. Words in bold are the answers and found in the list above.

The story of **aggregates** is about how we find and use sand, gravel and crushed rocks. The gravel operator will first locate **reserves** of aggregate which no one else has taken out of the ground yet. Before he can start a **mine** he must obtain a **permit** from the Ministry of Mines. The Ministry will want the gravel company to do studies to make sure that this will be a good thing:

- **Archaeology** studies are done to be sure there are no First Nations artifacts in the ground
 - the **impact** on the **environment** especially the streams must be minimal
 - a suitable route for the gravel **trucks** must be determined so the neighbours are not bothered by too much **noise** or **dust**
 - If the gravel is next to a river or the ocean it can be hauled by **barge** which is much quieter and does not cause as much **pollution** or traffic congestion as trucks on the highway
 - The **groundwater** must be protected to ensure that wells/streams are safe
- Once permission is given, the large loaders and diggers begin **extraction** by digging into the **seam** where the aggregate occurs in the ground. The aggregate could be dumped into a **jawcrusher** which crushes the large stones into small ones. Other material might be dumped into a **screen** to sort out the rocks by size. The crushed and sorted rocks and sand might be moved by **conveyor** to be dumped into piles of same size stuff. Some of the rocks are even **washed** to make sure they are clean from dust and dirt. Of course, for **safety** reasons the workers wear hardhats and reflective vests.

The piles of aggregates are now taken to be used. **Limestone** is crushed to make **Aglime** which is taken to orchards, greenhouses, farms and golf courses to help plants grow. Crushed **Gypsum** is taken to make wallboard or gyproc for houses. Many truck loads of **roadbase** are taken to build roads. **Gravel** is taken to build houses and improve **drainage** so water runs away from buildings. **Birdseye** is taken to school playgrounds while **Sand** is spread on lawns and golf courses to help the soil breathe. Trains even use **Enginesand** to provide traction on slippery tracks.

Many gravel **Pits** or mines use aggregates onsite. Some have a **Concrete** plant where gravel, water and **Cement** are mixed to be hauled to make sidewalks and building foundations especially. Other places might mix gravel and hot tar to make **Asphalt** used on roads.

When the aggregates are gone, the **reclamation** process begins to turn the pit into something useful like parks, agricultural land or housing.

Gravel pits are also about money. Cities buy gravel with **taxes** so it is cheaper for the citizens to buy gravel from closer to home. Gravel pits will only continue operating if the operator is able to make a **profit** by selling the aggregates for more than it costs him to produce it.

The Aggregate Matching Words

Activity 12

name _____ 30 min



Place the letter from the left column into the right column of the definition which matches the bold word. **Student version has no letters on left side column.**

A	GROUNDWATER	To remove gravel from the ground usually with loaders or big shovels	C
B	TRUCKS	A flat bottom boat used to haul aggregate down a river or across a lake.	H
C	EXTRACTION	The money the city/government collects from you to pay for gravel used by the city	D
D	TAXES	Underground water which might be damaged by a poorly planned gravel pit.	A
E	JAWCRUSHER	To turn an old gravel pit into something useful again like a park or lake.	I
F	PERMIT	Used to haul gravel when barges and trains are not available	B
G	ENVIRONMENT	The price paid for gravel minus the cost of producing it.	J
H	BARGE	A large machine which crushes stones into smaller stones	E
I	RECLAMATION	When the Ministry of Energy and Mines approves a mine, they issue a permit or license to start up.	F
J	PROFIT	The land, soil and air surrounding a gravel pit.	G