



General Construction Lesson Two: Heavy Equipment Facilitator Guide

Building Basics was paid for under an EL Civics grant from the U. S. Department of Education administered by the Virginia Department of Education. It was paid for under the Adult Education and Family Literacy Act of 1998; however, the opinions expressed herein do not necessarily represent the position or policy of the U. S. Department of Education, and no official endorsement by the U. S. Department of Education should be inferred. This document was designed and created by the Virginia Adult Learning Resource Center at Virginia Commonwealth University, 817 West Franklin Street, Suite 221, P.O. Box 842037, Richmond, VA 23284-2020. It may be reproduced for nonprofit, educational purposes only.

General Construction Heavy Equipment



Building Plan / Blue Prints / Specs (Getting Ready to Teach)

Lifeskill Objective: Learners will be able to identify heavy equipment used at a construction site and describe what each piece does.

EFF Skills: Speak So Others Can Understand, Work Together, Cooperate With Others

SCANS Skills: Resources (use materials efficiently)
Interpersonal (participate as member of a team; teach others; negotiate; work with diversity)

Lesson Length: 2 hours



Tools

Laying the

Foundation: Heavy Equipment Pictures
Picture of Construction Site--not included

Activity #1: Heavy Equipment Picture Cards--multiple sets for pair activity
and two extra sets for whole-class activity
Heavy Equipment Vocabulary Cards--multiple sets for pair activity
and two extra sets for whole-class activity
Heavy Equipment Description Cards--multiple sets for pair activity
Heavy Equipment Pictures

Activity #2: Heavy Equipment Picture Cards--multiple sets for pair activity
Heavy Equipment Vocabulary Cards--multiple sets for pair activity
Word Scrabble Handout A
Word Scrabble Handout B

Activity #3: Multilevel Dictation Script
Dictation Handout A
Dictation Handout B
Dictation Handout C
Dictation Script Handout

Target Vocabulary

Nouns:

backhoe loader	blade	bucket	bulldozer	cherry picker
compactor	concrete mixer	crane	crawler tracks	digger
dump truck	excavator	equipment	forklift	
front-end loader	grader	loader	mobile crane	outrigger
pipes	road	roller	stabilizer	sand
stones	tower crane	wheels	worker	

Verbs:

lift	sink	tip
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Adjectives:

deep	heavy	stable
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Laying the Foundation Warm-Up / Presentation



Activities	Materials
<p>1. Using a picture of a construction site, elicit from learners what's happening at the construction site. Examples:</p> <ul style="list-style-type: none"> ➤ Who is in the picture? ➤ Where are they? ➤ What are they doing? ➤ What type of equipment do you see? ➤ What kinds of materials or supplies do you see? ➤ Have you ever visited or worked at a construction site? <p>Answers may reflect equipment depicted in the Picture of Construction Site or from learners' own experience.</p> <p>Write answers on the board or overhead projector.</p>	<p>Picture of Construction Site</p>
<p>2. Tell learners that today they will learn to identify heavy equipment used at a construction site and describe what it does.</p>	
<p>3. Introduce names of heavy equipment. Hold up each Heavy Equipment Picture and say, "This is a dump truck." Ask students to repeat <i>dump truck</i>. Make a table on the board with two columns. Label the first column <i>Heavy Equipment</i>. In the first column, write "dump truck". Repeat with other Pictures.</p> <p>Ask higher level students to spell names of equipment as you write them on the board and/or spell aloud yourself.</p>	<p>Heavy Equipment Pictures–Dump Truck</p> <p>Heavy Equipment Pictures</p>
<p>4. Check comprehension. Hold up the picture of the dump truck. Ask, "Is this a dump truck?" Model, "Yes, it is." Hold up a picture of the concrete mixer. Ask "Is this a dump truck?" Model, "No, it isn't." Repeat with other Pictures.</p>	<p>Heavy Equipment Pictures–Dump Truck</p> <p>Heavy Equipment Pictures</p>

Actions	Materials
<p>5. Using the Heavy Equipment Pictures, show the picture of the dump truck. Ask, "What does a dump truck do?" Label the second column <i>What does it do?</i> Elicit responses from students and fill in the second column of the table on the board. Provide responses if necessary. Repeat for each piece of equipment.</p> <p>Sample table:</p>	<p>Heavy Equipment Pictures–Dump Truck</p> <p>Heavy Equipment Pictures</p>

Heavy Equipment	What does it do?
dump truck	hauls materials and debris away; delivers sand or other materials to a site
forklift	moves materials around a site; unloads trucks
grader	makes a roadbed smooth by dragging a blade over it
compactor or roller	smoothes the road with a heavy roller
bulldozer	moves dirt, stones, or other materials
concrete mixer	mixes water, sand, gravel, and cement to make concrete
crane	lifts heavy things
tower crane	lifts beams, pipes, batches of concrete or other materials to high places
mobile crane	crane that moves on wheels
excavator or digger	digs deep holes
crawler tracks	prevent the machine from sinking into the ground
front-end loader	lifts heavy materials
backhoe loader	uses a bucket on the back for digging and has a loader on front for lifting
cherry picker	lifts a worker in a bucket
outriggers or stabilizers	keep equipment stable so it does not tip over

Building on the Foundation Practicing the New Language



Actions	Materials
<p>Activity #1: <i>Picture Match</i></p> <p>Explain that students will work with a partner to match the picture with the correct vocabulary word for it.</p> <p>Using the two extra sets of Picture Cards and/or the Vocabulary Cards, give each learner a Picture Card (lower levels) or Vocabulary Card (higher levels). Ask them to find a match by looking for someone with the same Picture Card or the same Vocabulary Card, as a way to put students in pairs.</p> <p>Note: If you have a large class, you may need more than two sets of cards to make sure that everyone can find a match.</p> <p>When learners are matched, or in their pair, explain that they will work with their partner to match all of the pictures with their correct names.</p> <p>Easy: </p> <p>Give each pair of students a set of Heavy Equipment Picture Cards and the Vocabulary Cards. Students work together to match the picture with the correct Vocabulary Card.</p> <p>Difficult: </p> <p>Give each pair of students a set of Heavy Equipment Picture Cards, Vocabulary Cards, and Description Cards. Ask them to match the picture, word, and description.</p>	<p>Heavy Equipment Picture Cards</p> <p>Heavy Equipment Vocabulary Cards</p> <p>Heavy Equipment Description Cards</p>

Actions	Materials
<p>Circulate among all pairs to assist and provide feedback. Bring closure to the activity by using the Heavy Equipment Pictures and asking students, "What's this?" They should respond with the correct name for the equipment on the visual. Ask, "What does it do?" Elicit responses from the higher level students, and ask all students to repeat; e.g., "A bulldozer moves dirt, stones, and other materials." Repeat with additional visuals.</p>	<p>Heavy Equipment Pictures</p>
<p>Activity #2: Word Scrabble</p> <p>Explain that students will practice spelling and pronouncing the names of heavy equipment.</p> <p>Using the matched pictures and words from <i>Activity #1</i> as a reference, students complete worksheets individually.</p> <p>Easy: </p> <p>Students complete Handout A.</p> <p>Difficult: </p> <p>Students complete Handout A and Handout B.</p>	<p>Heavy Equipment Picture Cards</p> <p>Heavy Equipment Vocabulary Cards</p> <p>Word Scrabble Handout A</p> <p>Word Scrabble Handout B</p>

Actions	Materials
<p>Activity #3: <i>Multilevel Dictation</i></p> <p>Explain that students will listen to a description of heavy equipment and will write down what they hear. Read the Multilevel Dictataion Script and ask students to listen. Clarify new language.</p> <p>Pass out copies of the Dictation Handout.</p> <p>Easy: </p> <p>Students complete Dictation Handout A (listen and circle).</p> <p>Intermediate: </p> <p>Students complete Dictation Handout B (listen and write).</p> <p>Difficult: </p> <p>Students complete Dictation Handout C (listen and write).</p> <p>Explain to students that you will read the paragraph again, and this time, they should listen and write. Model the activity by first reading the first sentence only. Then, using the overhead or blackboard, show students how to fill in or circle the missing word.</p> <p>Then, go back and read the Multilevel Dictation Script from the beginning. Circulate as you read it to check level of comprehension. Read the paragraph again as many times as is necessary for learners to complete most (or all) of the Handout.</p> <p>Note: If a learner finishes before his peers, he can try the next higher level. Handout C learners who complete their dictation can copy the entire paragraph on blank paper.</p> <p>Check answers by pairing a student with Handout A with a student with Handout B, and Handout B with Handout C, etc. Allow learners to assist each other. Then, show Handout A on the overhead or blackboard and elicit the correct answers. (Refer to Handout B and C answers as appropriate.)</p> <p>Read the paragraph again with the whole class. Give each learner a copy of the complete Heavy Equipment Multilevel Dictation Script.</p>	<p>Multilevel Dictation Script</p> <p>Dictation Handout A</p> <p>Dictation Handout B</p> <p>Dictation Handout C</p> <p>Multilevel Dictation Script Handout</p>

Finishing Work
Extension or Out-of-Class Practice



Actions	Materials
<ol style="list-style-type: none">1. Check comprehension of learners as you circulate for each activity. Review and/or re-teach as necessary.2. Ask learners to visit a construction site and write down names of equipment they see.3. Learners put the names of heavy equipment in alphabetical order.	



THE VIRGINIA ADULT LEARNING RESOURCE CENTER

Virginia Commonwealth University

General Construction Lesson Two: Heavy Equipment Facilitator Materials

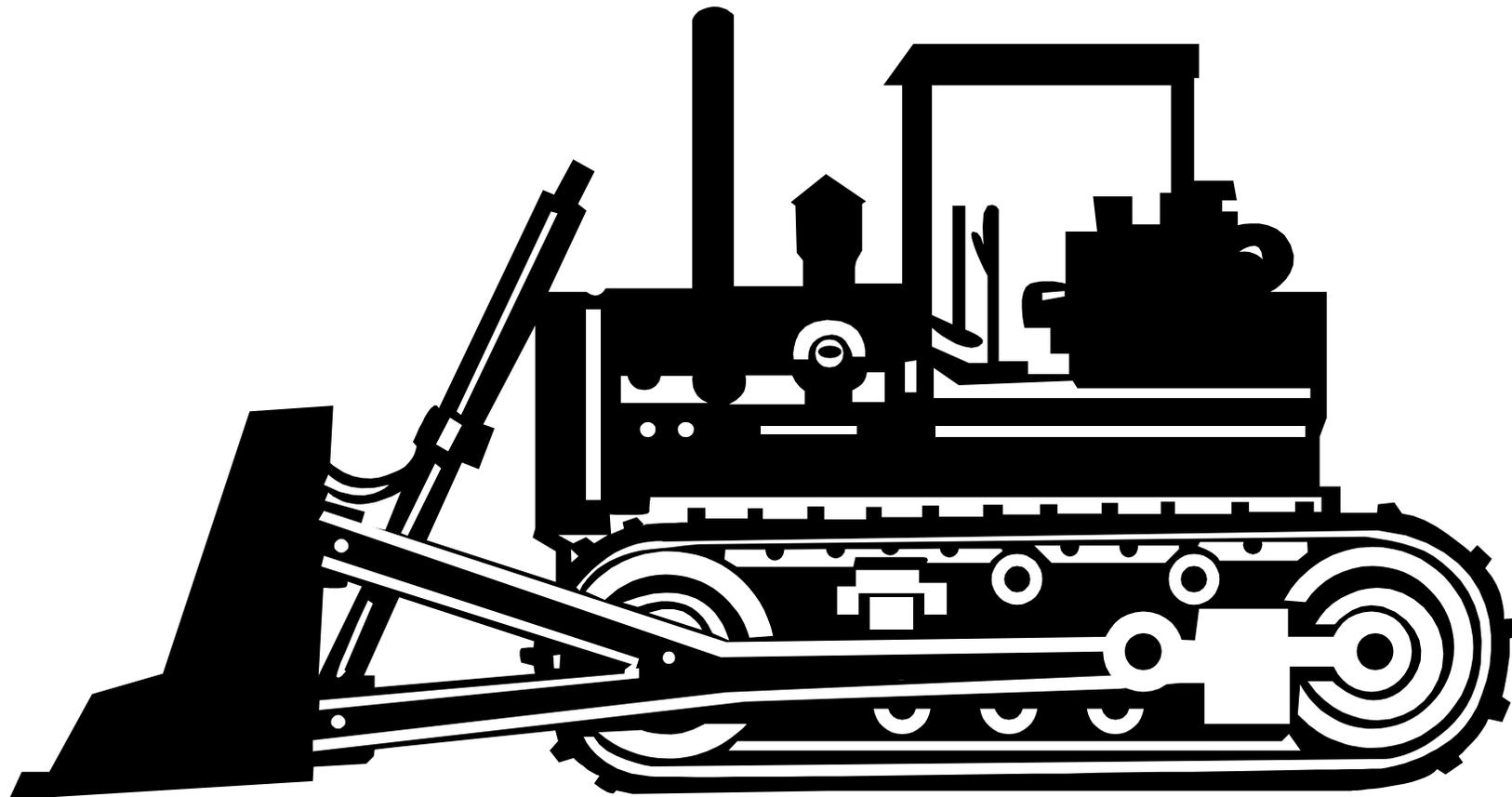
Building Basics was paid for under an EL Civics grant from the U. S. Department of Education administered by the Virginia Department of Education. It was paid for under the Adult Education and Family Literacy Act of 1998; however, the opinions expressed herein do not necessarily represent the position or policy of the U. S. Department of Education, and no official endorsement by the U. S. Department of Education should be inferred. This document was designed and created by the Virginia Adult Learning Resource Center at Virginia Commonwealth University, 817 West Franklin Street, Suite 221, P.O. Box 842037, Richmond, VA 23284-2020. It may be reproduced for nonprofit, educational purposes only.

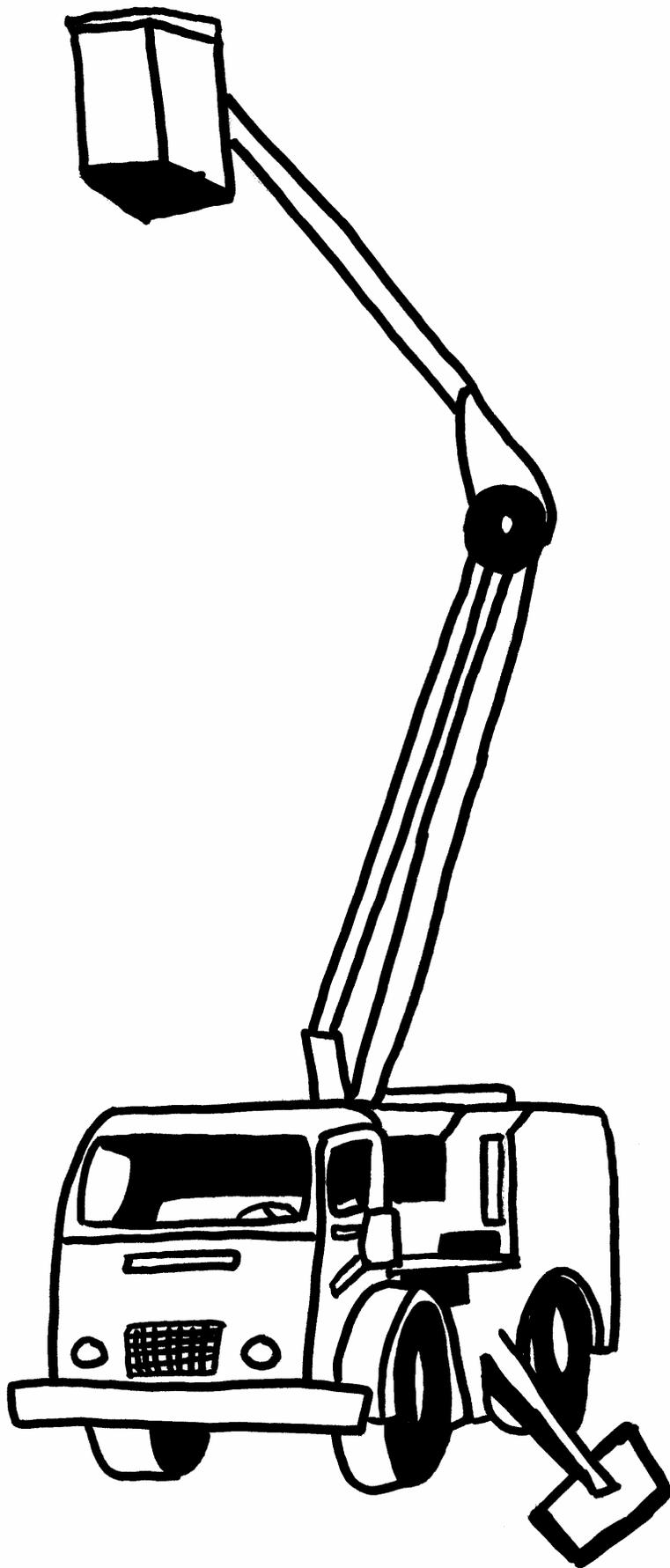
Heavy Equipment Pictures

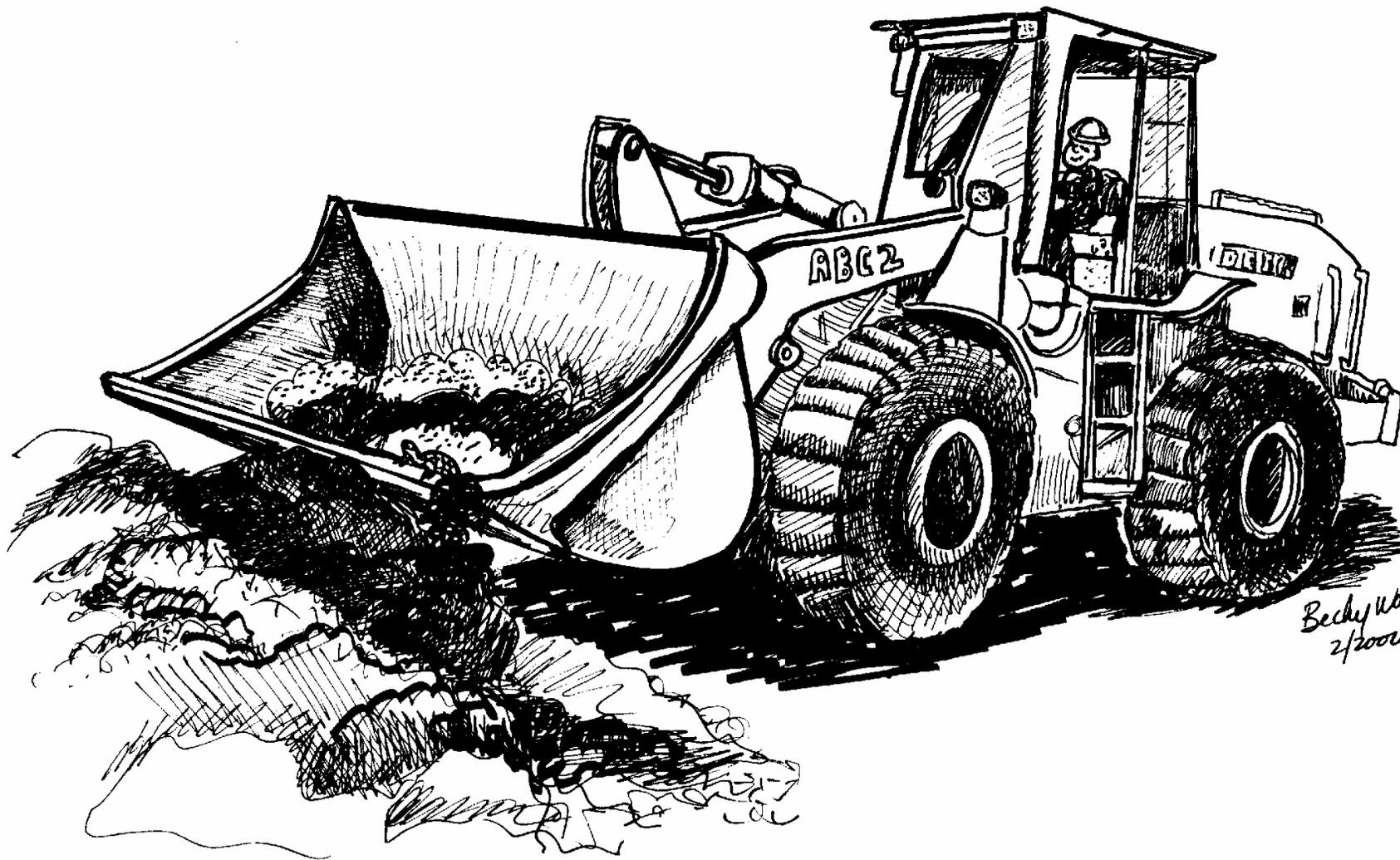
Key to Heavy Equipment Pictures

The following large versions of the **Heavy Equipment Pictures** are labeled by number only, to make them more useful in classroom activities. The type of equipment depicted in each picture is listed below.

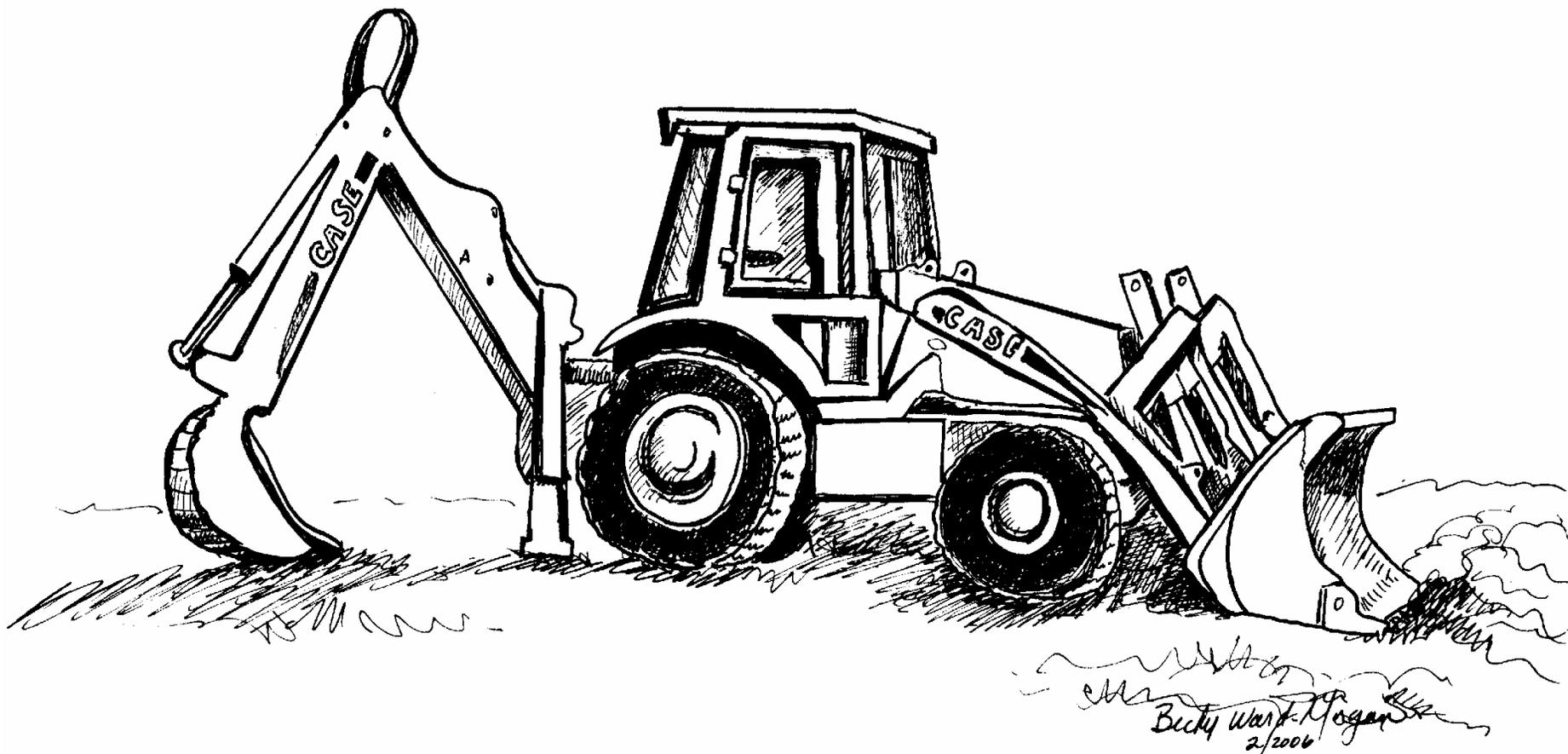
Picture #1	Bulldozer
Picture #2	Cherry Picker
Picture #3	Front-end Loader
Picture #4	Backhoe Loader
Picture #5	Dump Truck
Picture #6	Crane
Picture #7	Forklift
Picture #8	Tower Crane
Picture #9	Mobile Crane
Picture #10	Grader
Picture #11	Compactor/Roller
Picture #12	Excavator/Digger
Picture #13	Outrigger/Stabilizer
Picture #14	Crawler Tracks
Picture #15	Cement Mixer

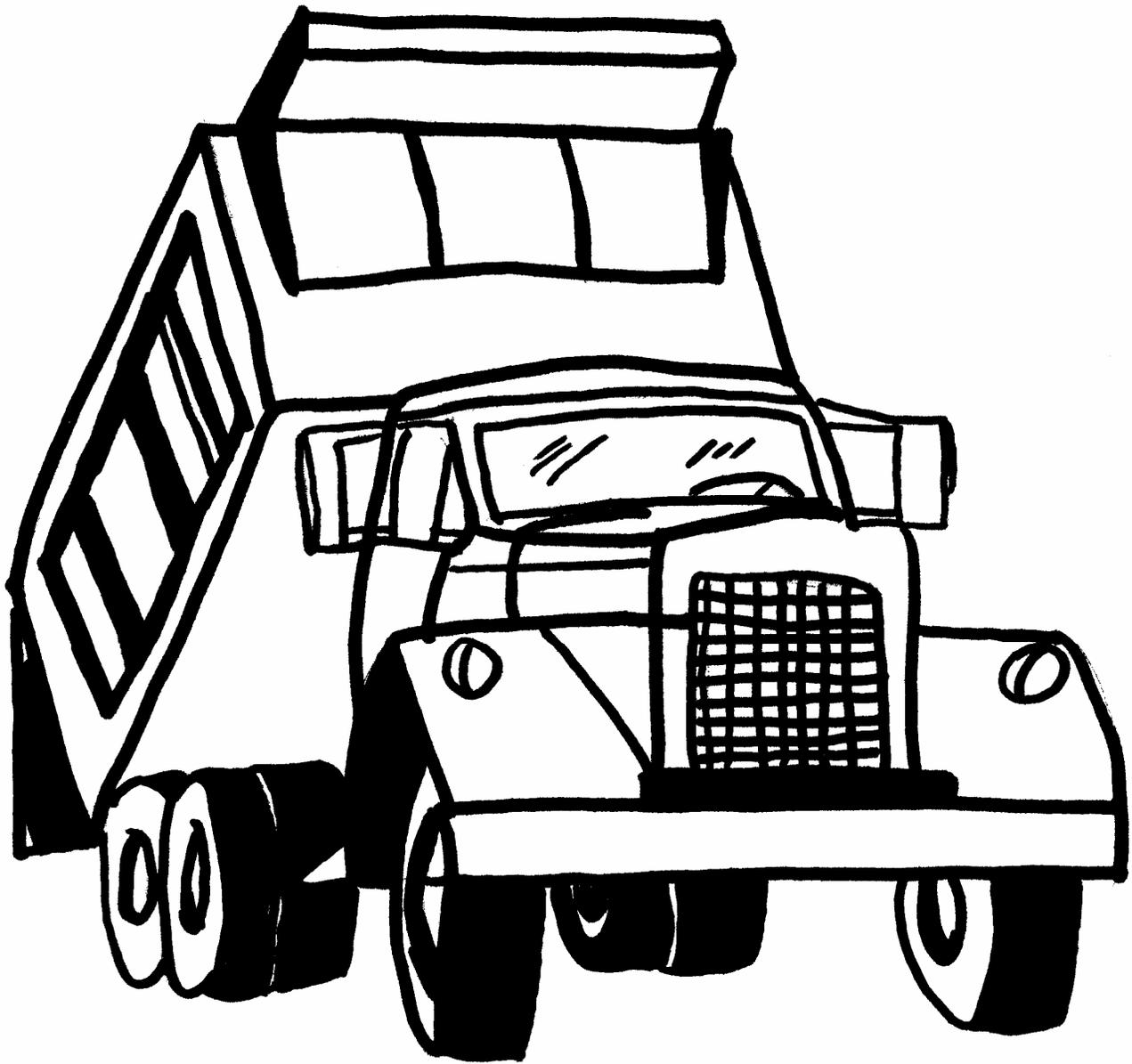


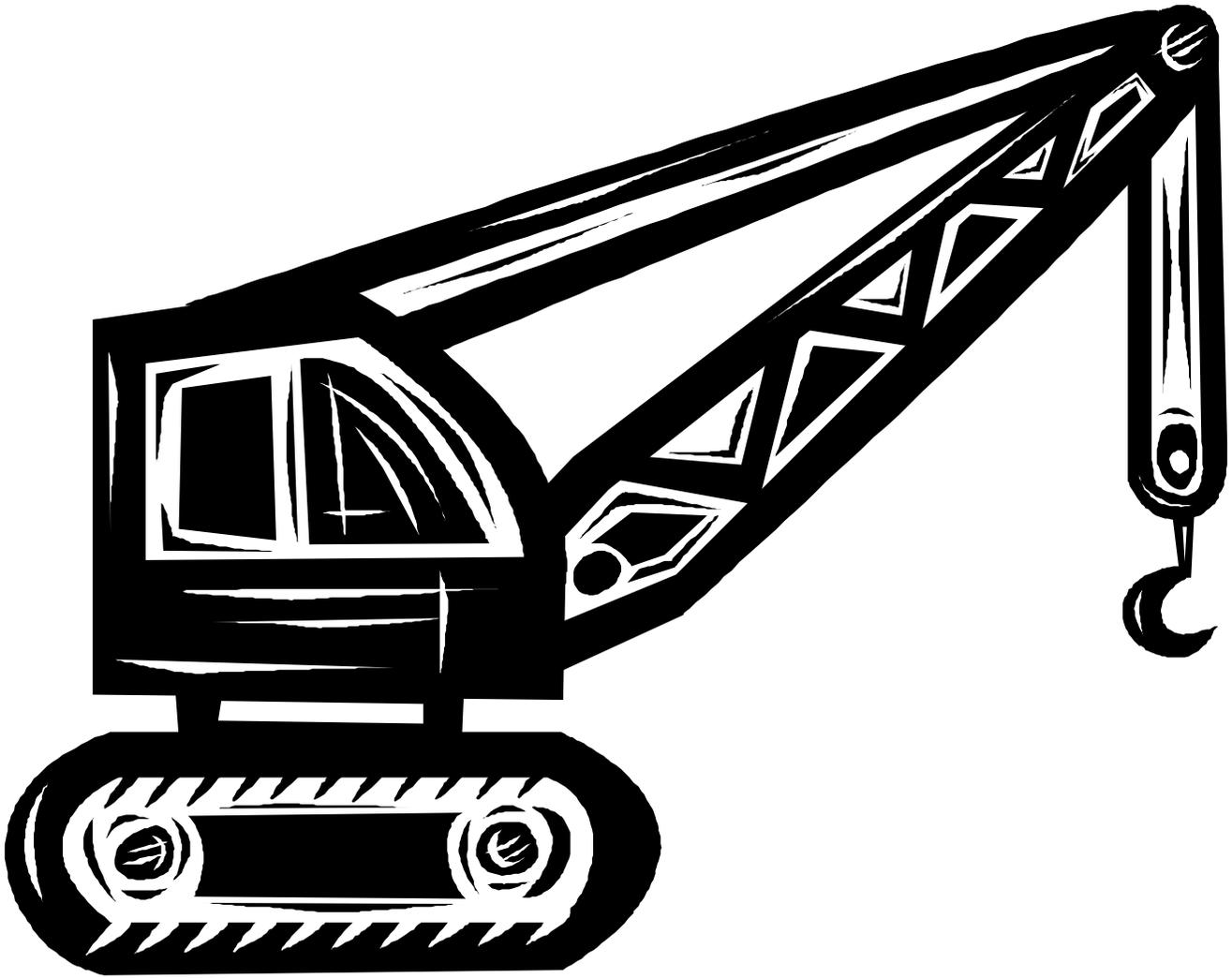




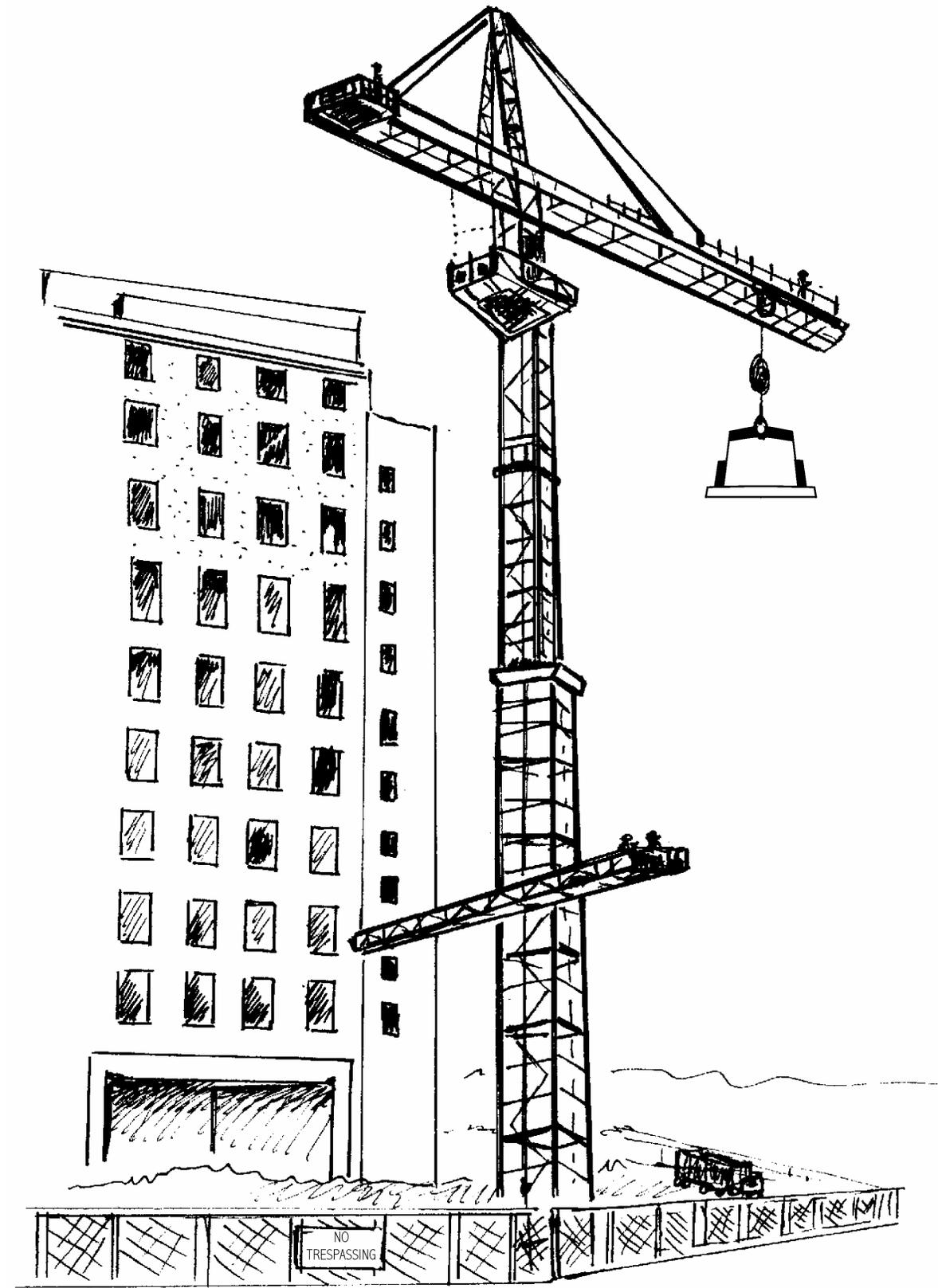
Becky Ward
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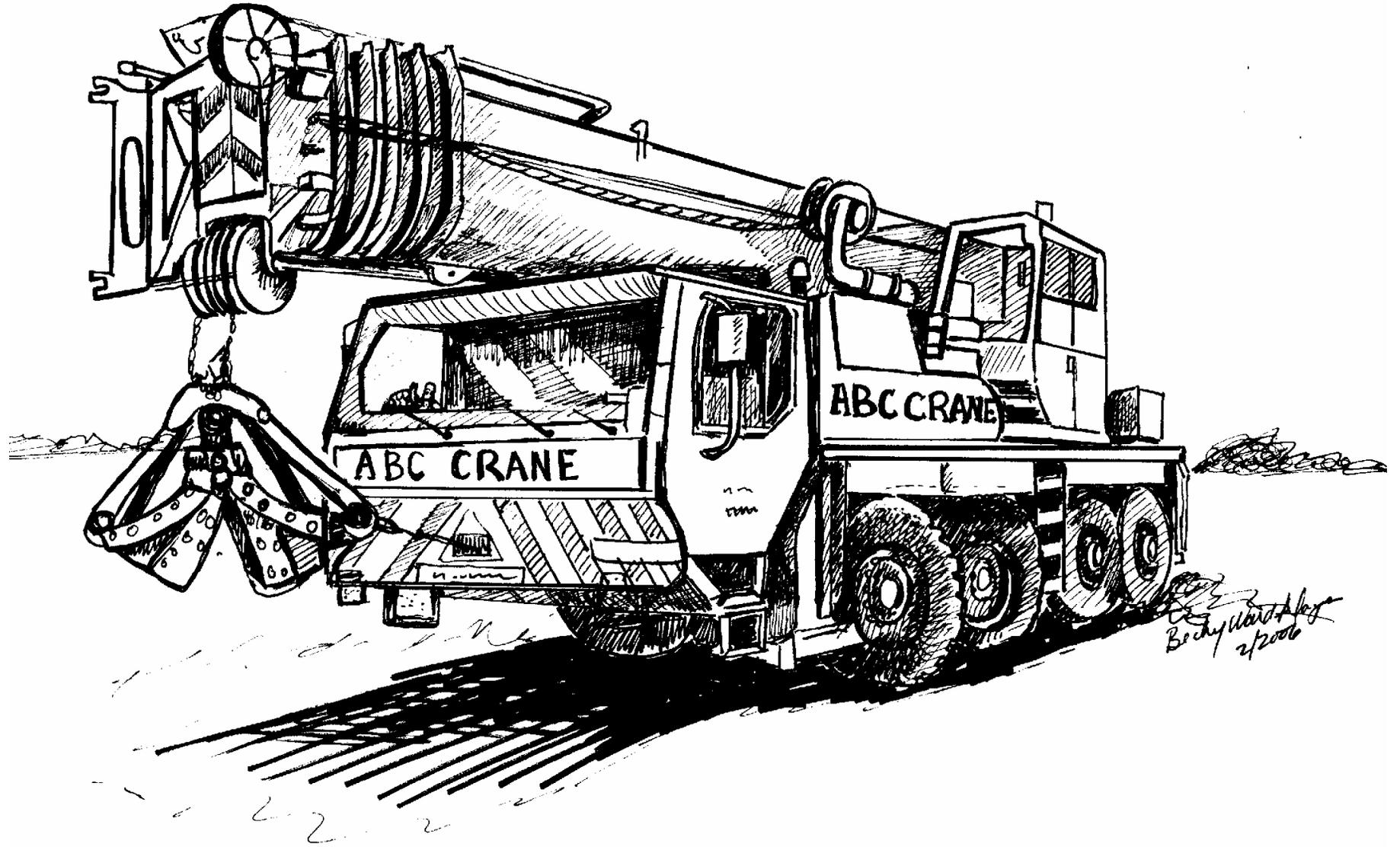


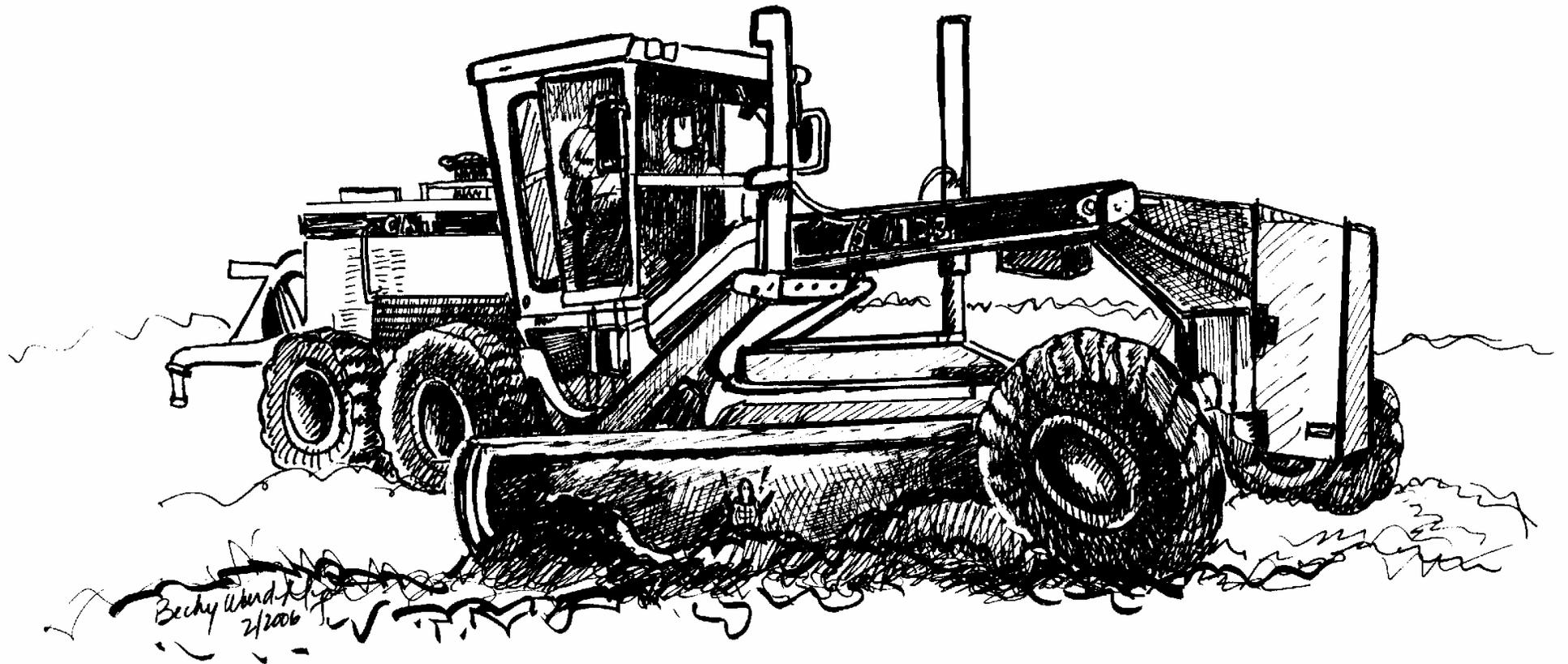


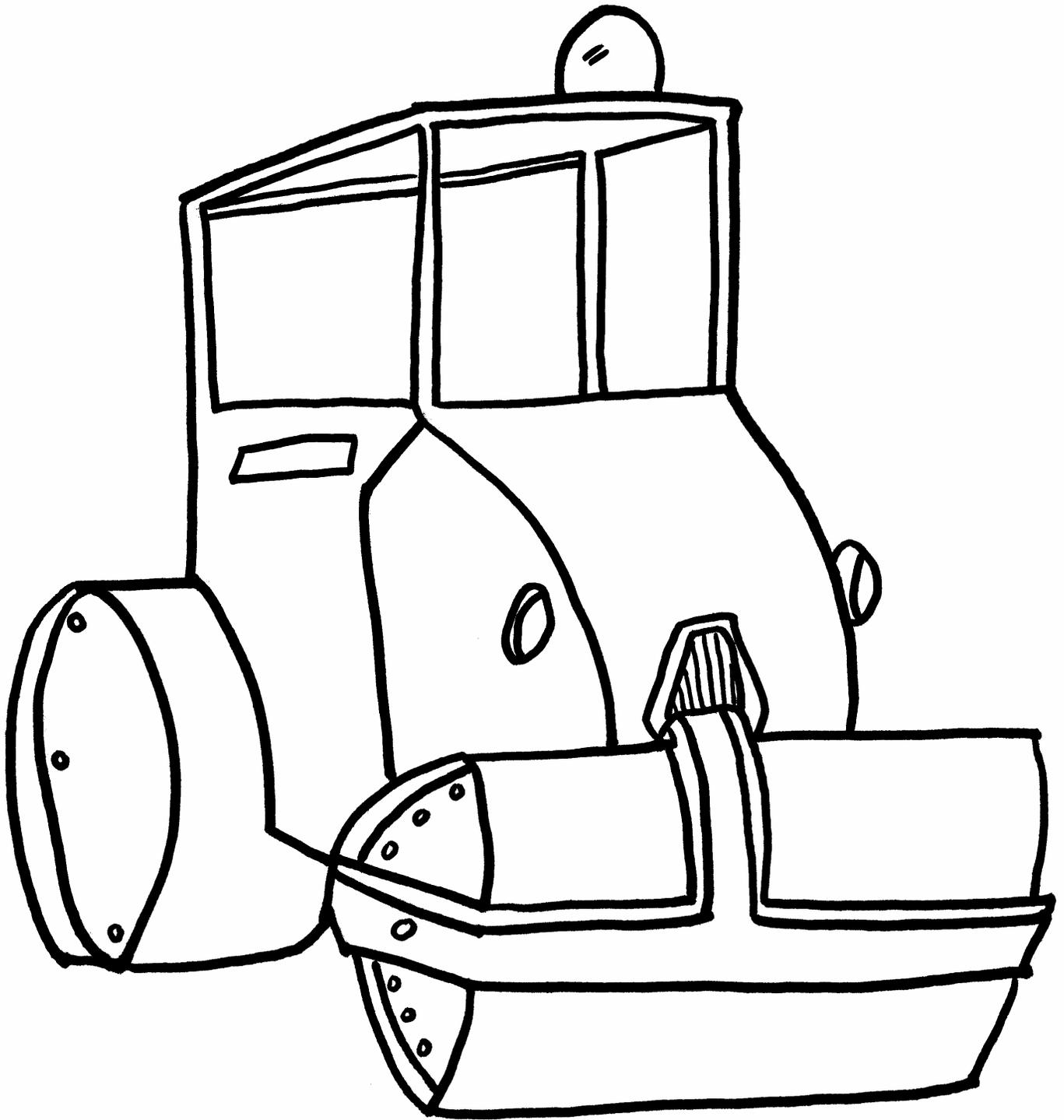




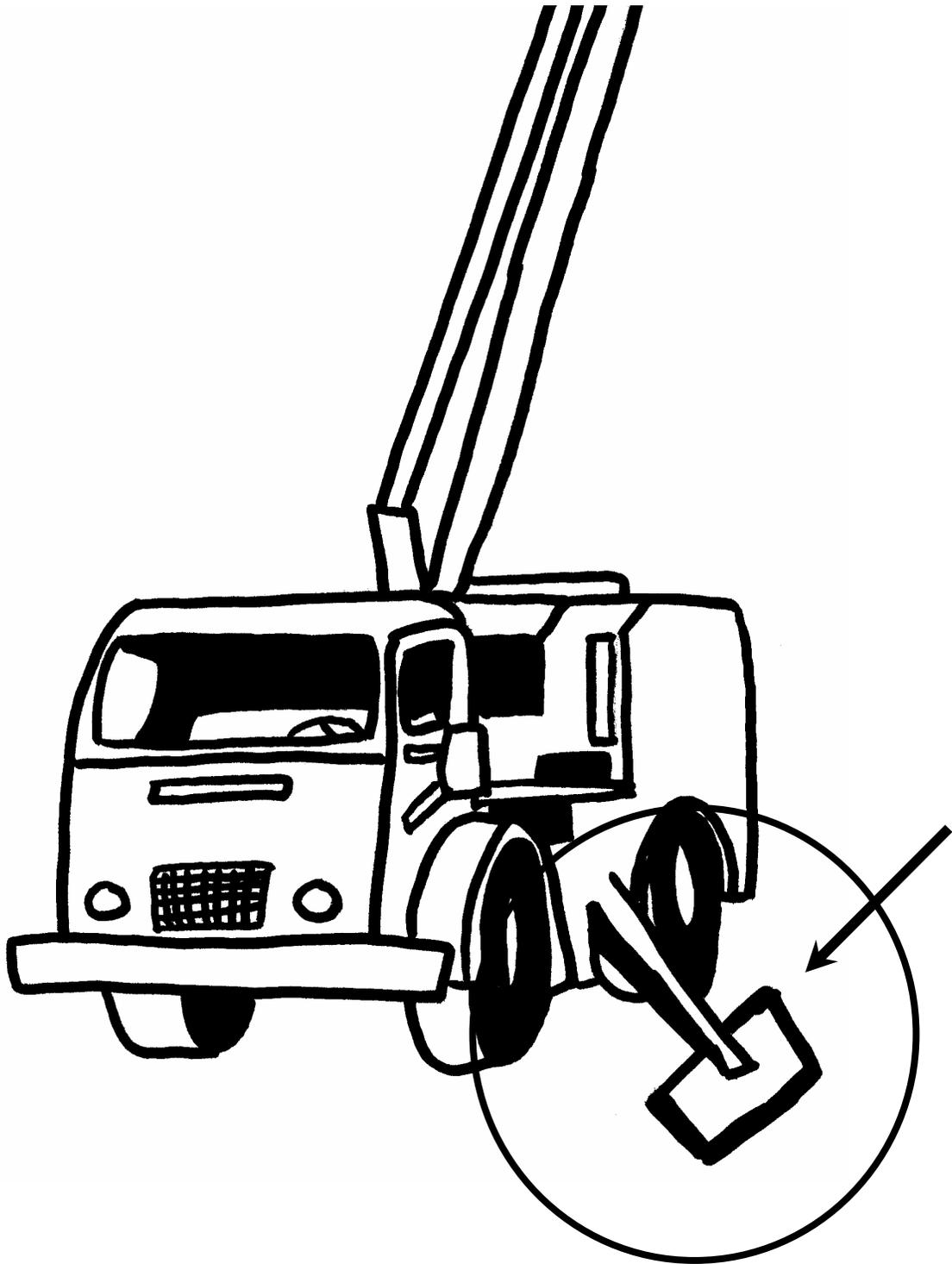


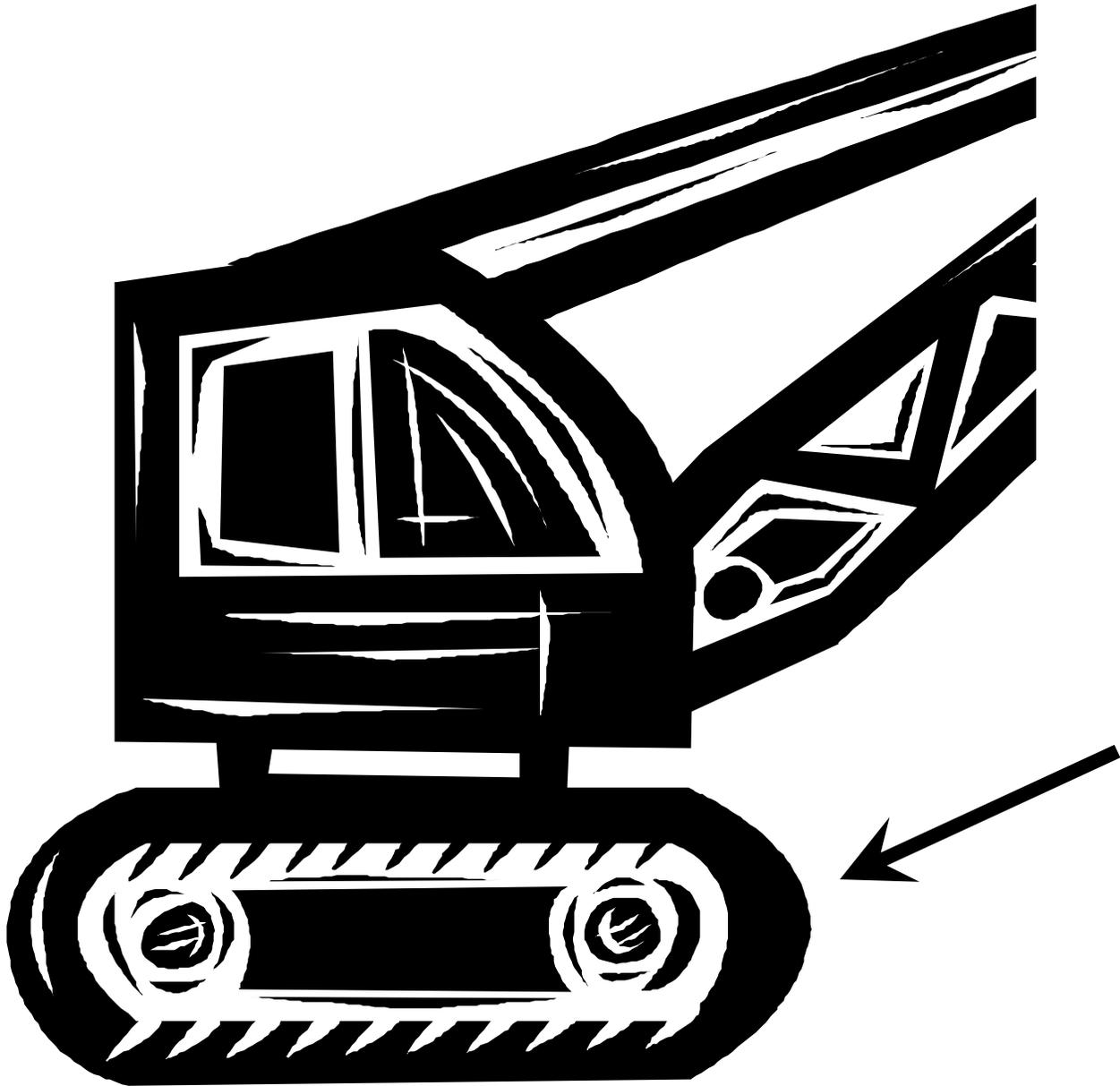


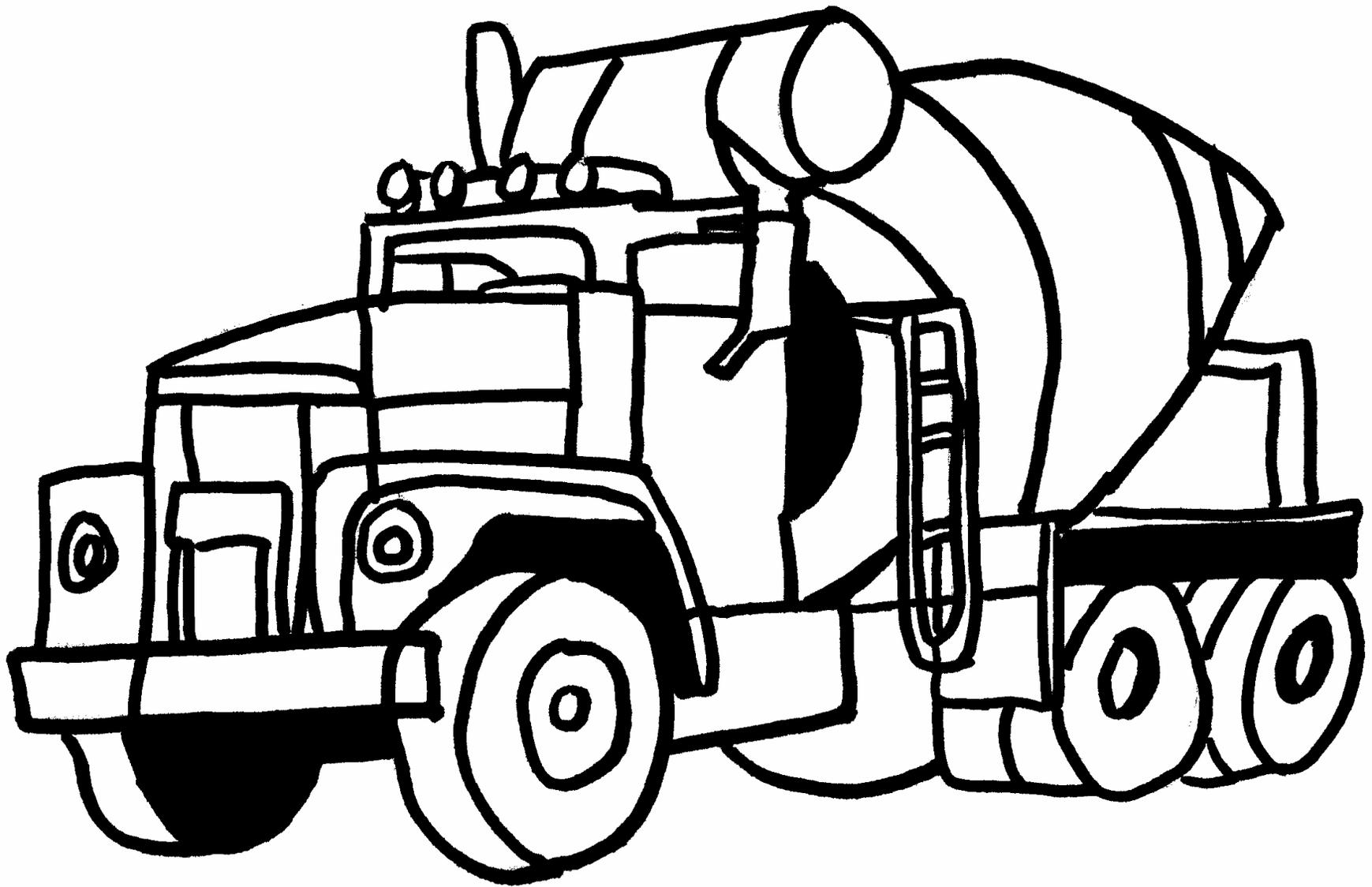


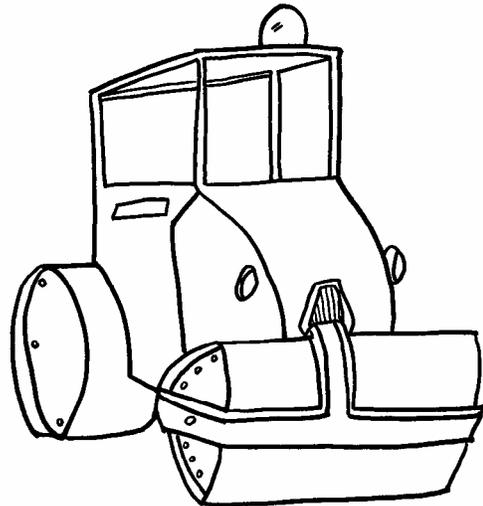
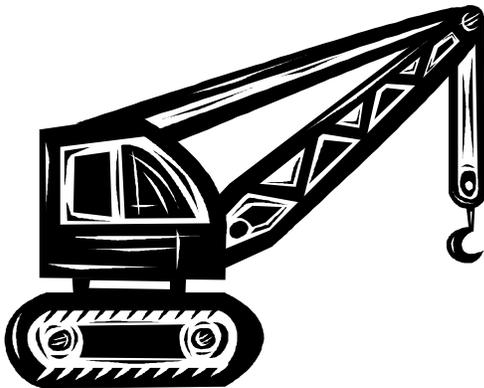
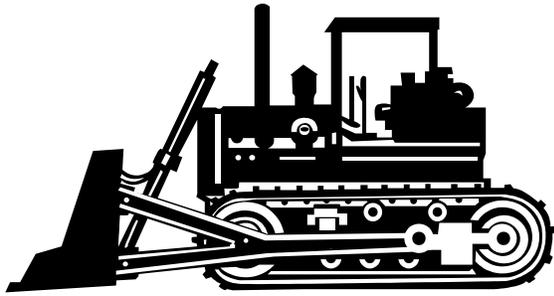


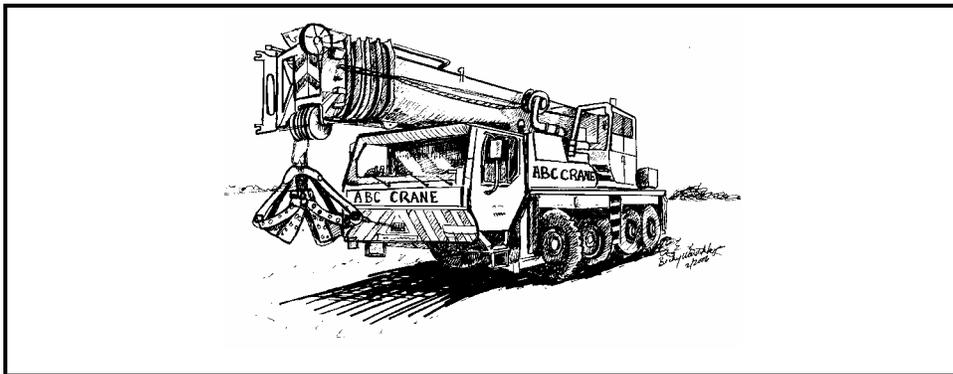
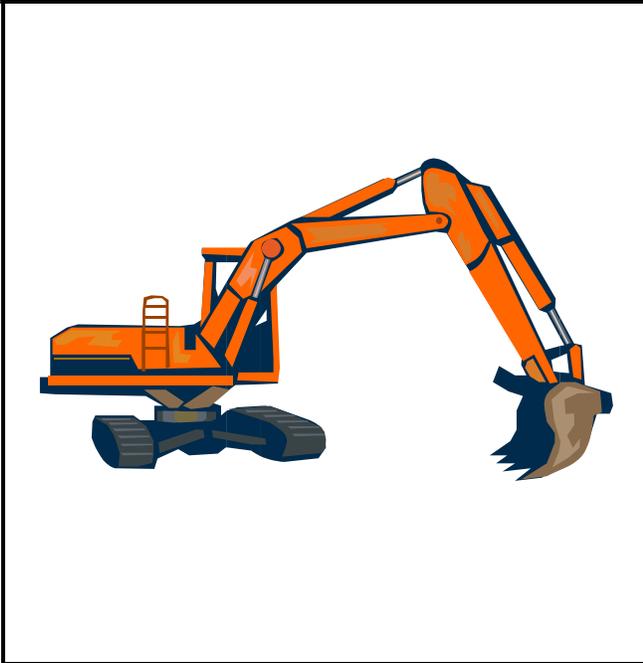
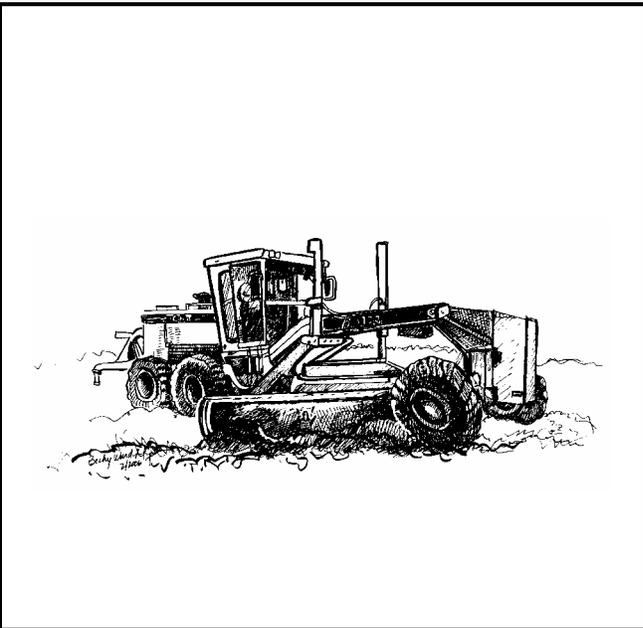


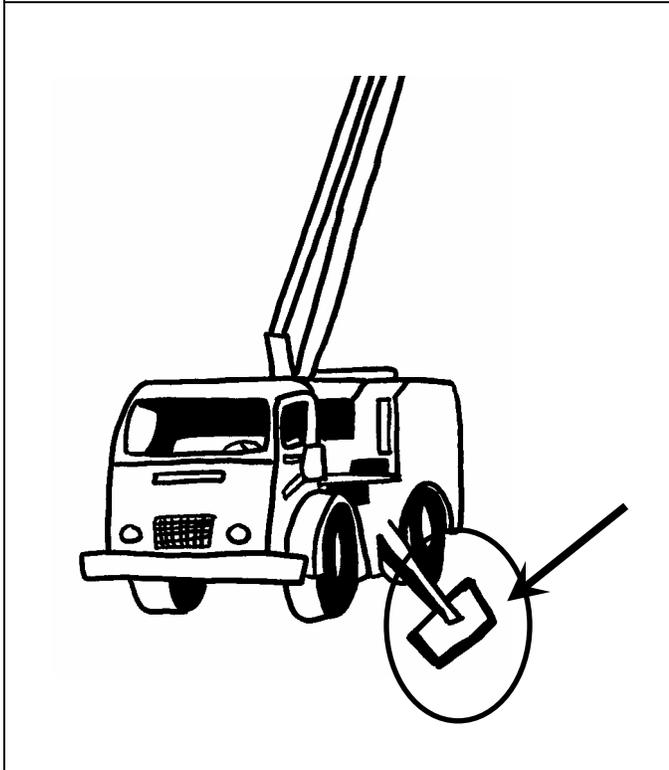
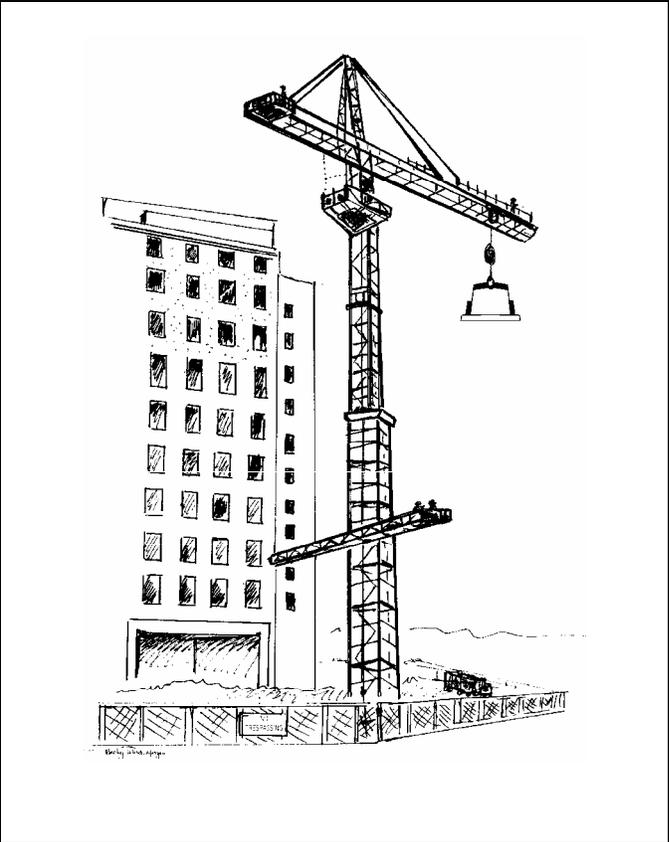
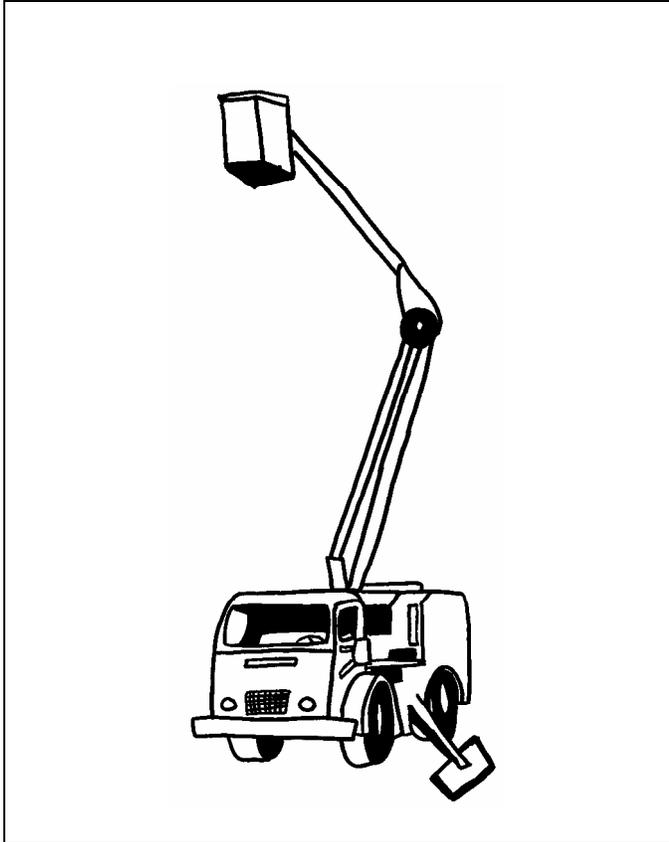












Activity #1: Heavy Equipment Vocabulary Cards

bulldozer

cherry picker

front-end loader

backhoe loader

dump truck

crane

forklift

tower crane

mobile crane

grader

**compactor or
roller**

**excavator or
digger**

**outriggers or
stabilizers**

crawler tracks

concrete mixer

Activity #1: Heavy Equipment Description Cards

hauls materials away

lifts a worker in a bucket

makes a roadbed smooth

smooths with a heavy roller

moves dirt or stones away

mixes water, sand, gravel, and cement

lifts heavy things

lifts beams or pipes to high places

crane that moves on wheels

digs deep holes or moves dirt

prevent machine from sinking

lifts heavy materials

uses bucket on back and has a loader on front

keep the equipment stable so it doesn't tip over

unloads trucks

Activity #2: Word Scrabble

Handout A

1. b u l d o z e r
2. d u m p t r u c k
3. c r a n e
4. t o w e r c r a n e
5. m o b i l e c r a n e
6. f r o n t - e n d l o a d e r
7. f o r k l i f t
8. g r a d e r
9. c o m p a c t o r
10. r o l l e r
11. e x c a v a t o r
12. d i g g e r
13. c r a w l e r t r a c k s
14. o u t r i g g e r
15. s t a b i l i z e r
16. c h e r r y p i c k e r

Activity #2: Word Scrabble

Handout B



1. mupd ckutr dump truck
2. ldbzourel bulldozer
3. caren crane
4. twroe caren tower crane
5. mblioe caren mobile crane
6. notfr-nde adoerl front-end loader
7. krofflit forklift
8. ckbahoe ldroae backhoe loader
9. chrrye ckrpie cherry picker
10. gdrear grader
11. mpcotroac compactor
12. rlerlo roller
13. xcvtreaao excavator
14. ggdrie digger
15. crlrwae trcksa crawler tracks
16. rgoutiger outrigger
17. btsalizrei stabilizer
18. cncetreoe mxrie concrete mixer

Activity #3: Multilevel Dictation Script

There are many types of heavy equipment at a construction site. A grader makes a roadbed smooth by dragging a blade over the ground. A compactor, or roller, smoothes the road with a heavy roller. A bulldozer moves dirt, stones, or other materials away. A concrete mixer mixes water, sand, gravel, and cement to make concrete. Cranes are used to lift things. A tower crane lifts beams, pipes, or batches of concrete to high places. A mobile crane moves on wheels. An excavator, or digger, can dig deep holes. Crawler tracks prevent the machine from sinking into the ground. A front-end loader lifts heavy materials. A backhoe loader has a bucket for digging on the back and a loader for lifting on the front. A cherry picker lifts a worker in a bucket. Outriggers, or stabilizers, keep the equipment stable so it does not tip over.

Activity #3: Multilevel Dictation

Handout A

There are many types of heavy equipment at a construction site.

A **grader** ~~dump truck~~ makes a roadbed smooth by dragging a blade over the ground.

A compactor, or **roller** ~~excavator~~, smoothes the road with a heavy roller.

A ~~outrigger~~ **bulldozer** moves dirt, stones, or other materials away.

A **concrete mixer** ~~forklift~~ mixes water, sand, gravel, and cement to make concrete.

~~Graders~~ **Cranes** are used to lift things.

A ~~backhoe~~ **tower crane** lifts beams, pipes, or batches of concrete to high places.

A **mobile crane** ~~backhoe~~ moves on wheels.

An ~~bulldozer~~ **excavator** or digger, can dig deep holes.

Crawler tracks ~~Mobile~~ prevent the machine from sinking into the ground.

A **front-end loader** ~~dump truck~~ lifts heavy materials.

A **backhoe loader** ~~bulldozer~~ has a bucket for digging on the back and a loader for lifting on the front.

A **cherry picker** ~~bulldozer~~ lifts a worker in a bucket.

Outriggers, or **stabilizers** ~~backhoe~~ keep the equipment stable so it does not tip over.

Activity #3: Multilevel Dictation

Handout B

There are many types of heavy equipment at a construction site.

A **grader** makes a roadbed smooth by dragging a blade over the ground.

A compactor, or **roller**, smoothes the road with a heavy roller.

A **dump truck** moves dirt, stones, or other materials away.

A **cement mixer** mixes water, sand, gravel, and cement to make concrete.

Cranes are used to lift things.

A **tower** crane lifts beams, pipes, or batches of concrete to high places.

A **mobile** crane moves on wheels.

An **excavator**, or digger, can dig deep holes.

Crawler **tracks** prevent the machine from sinking into the ground.

A front-end **loader** lifts heavy materials.

A **backhoe** loader has a bucket for digging on the back and a loader for lifting on the front.

A **cherry picker** lifts a worker in a bucket.

Outriggers, or **stabilizers**, keep the equipment stable so it does not tip over.

Activity #3: Multilevel Dictation

Handout C

There are many types of heavy equipment at a construction site.

A grader makes a roadbed smooth by dragging a blade over the ground.

A compactor, or roller, smoothes the road with a heavy roller.

A bulldozer moves dirt, stones, or other materials away.

A cement mixer mixes water, sand, gravel, and cement to make concrete.

Cranes are used to lift things.

A tower crane lifts beams, pipes, or batches of concrete to high places.

A mobile crane moves on wheels.

An excavator, or digger, can dig deep holes.

Crawler tracks prevent the machine from sinking into the ground.

A front-end loader lifts heavy materials.

A backhoe loader has a bucket for digging on the back and a loader for lifting on the front.

A cherry picker lifts a worker in a bucket.

Outriggers, or stabilizers, keep the equipment stable so it does not tip over.