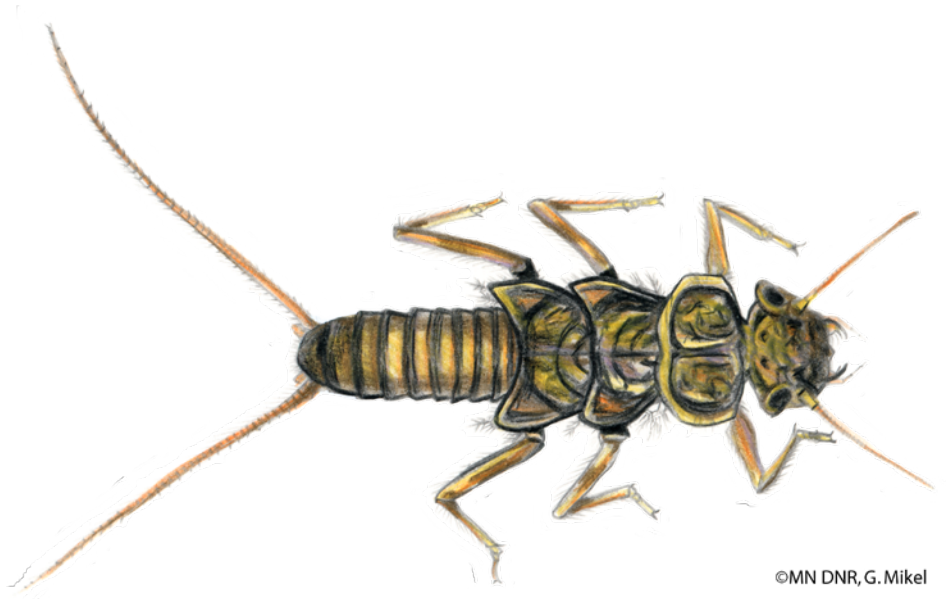


# Fool Fish With Flies

*A dinner bell for fish, the pitter-patter of teeny flapping insect wings signals a heavy hatch.*



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## Chapter 5 • Lesson 6

Please note: Academic Standards are updated regularly and our alignments will be updated on the DNR Academic Standards Website at: [www.mndnr.gov/education/teachers/edstandards\\_intro.html](http://www.mndnr.gov/education/teachers/edstandards_intro.html)

# Fool Fish With Flies

## Minnesota Academic Standards

- 🕒 Lesson *introduces* this Benchmark.
- 🕒 Lesson *partially* addresses this Benchmark.
- 🕒 Lesson *fully* addresses this Benchmark.

### Language Arts

Grades 3, 4, 5

#### I. Reading and Literature

##### B. Vocabulary Expansion:

**Benchmark 1**—The student will acquire, understand and use new vocabulary through explicit instruction and independent thinking. 🕒

### History and Social Studies

Grade 4-8

#### V. Geography

##### D. Interconnections: Standard:

**Benchmark 2**—Students will analyze how the physical environment influences human activities. 🕒

### Science

Grade 3

#### IV. Life Science

##### B. Diversity of Organisms:

**Benchmark 1**—The student will describe the structures that serve different functions in growth, survival and reproduction for plants and animals. 🕒

##### D. Heredity:

**Benchmark 2**—The student will identify similarities and differences between parent and offspring. 🕒

Grade 5

#### IV. Life Science

##### F. Flow of Matter and Energy:

**Benchmark 2**—The student will use food webs to describe the relationships among producers, consumers, and decomposers in an ecosystem in Minnesota. 🕒

## Environmental Literacy Scope and Sequence

### Benchmarks

- Social and natural systems are made of parts. (PreK-2)
- Social and natural systems may not continue to function if some of their parts are missing. (PreK-2)
- When the parts of social and natural systems are put together, they can do things they couldn't do by themselves. (PreK-2)
- In social and natural systems that consist of many parts, the parts usually influence one another. (3-5)
- Social and natural systems may not function as well if parts are missing, damaged, mismatched or misconnected. (3-5)

For the full Environmental Literacy Scope and Sequence, see:

[www.seek.state.mn.us/ceemn\\_c.cfm](http://www.seek.state.mn.us/ceemn_c.cfm)

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## Chapter 5 • Lesson 6

### Fool Fish With Flies

**Grade Level:** 3-5

**Activity Duration:** 30 minutes

**Group Size:** at least 4

**Subject Areas:** Science, Language Arts, Social Studies

**Academic Skills:** listening, matching, recognition, small group skills

**Setting:** indoor or outdoor gathering area with tables

**Vocabulary:** abdomen, antennae, complete metamorphosis, dry fly, exoskeleton, flies, incomplete metamorphosis, larva, life cycle, molting, nymph, nymph pattern, pupa, spiracles, thorax, wet fly

**Internet Search Words:** metamorphosis, fly fishing, fly tying

### Instructor's Background Information

Flies are small, lightweight, artificial lures that often resemble the insects or small fish that other fish eat. Early flies were made from natural materials, including fur, feathers, and wool yarn tied to the shank of a hook with silk thread. As anglers learned more about the habitats and food preferences of the fish they sought, they used the information to their advantage, making flies that more effectively enticed fish to bite. As technology and new materials have resulted in lighter rods, reels, and line, there have also been advances in artificial fly tying materials, with the introduction of products such as tinsel, synthetic yarn, foam, thin pieces of rubber, and glue. Even though materials have changed, the basic intent remains the same: to create a lure that mimics a fish's natural food, and to present it in a natural way. The more anglers learn about what fish eat, the greater their success in fooling a fish into biting.

#### Parts of an Insect

Some fish are extremely particular about what they will bite, so flies must closely resemble the foods fish prefer. Many fish eat a variety of insects. Fish often react first to the general body shape, or silhouette, of an insect, which includes its body parts. An insect's body has a hard **exoskeleton**, a shell-like structure on the outside of the body. The body is comprised of three parts: the head, thorax, and abdomen.

### Summary

When fly anglers research the conditions of their fishing lakes and streams, they also study the life cycles of the aquatic insects living in those waters. This helps them determine which flies to use as lures, based on which species are hatching ("match the hatch") and the life cycle stages of the insects that the fish are likely to bite. In this lesson, students learn about the life stages and body parts of various aquatic insects, and play a game of Go Fly Fish to become familiar with some dry flies and nymphs and the aquatic insects they imitate.

### Student Objectives

The students will:

- 1 Restate the life cycle of an insect.
- 2 Differentiate between complete and incomplete metamorphosis.
- 3 Diagram the external anatomy of an insect.
- 4 Identify the three basic fish flies and describe the purpose of each.

### Materials

- **Parts of an Insect Sheet**
- **Aquatic Insect Life Cycles Sheet**
- **Fly Types Sheet**
- Examples of flies, especially dry flies and nymphs (optional)
- **Go Fly Fish Cards**



See the **Parts of an Insect Answer Sheet** for an illustration.

## Head

Many insects' heads are dominated by two compound eyes oriented upward and to the sides. Each compound eye is composed of thousands of individual lenses, or facets. The front of the head has mouthparts that help the insect either chew or suck, depending on its diet.

The **antennae** extend from the upper portion of the head, usually pointing forward. Insect antennae don't detect sound—they're sensory appendages used for touching, tasting, and smelling. From species to species, antennae vary widely in shape, length, and thickness.

## Thorax

The **thorax** is usually the widest portion of an insect's body. It's located directly behind the head. The legs and wings are attached directly to the thorax. Insects have six legs, each consisting of jointed sections. Insect species have many kinds of specially adapted legs, which allow them to walk, perch, swim, scoop and otherwise handle prey, and even groom their eyes and faces.

Insect wings have many shapes and sizes as well. Some adult insects have two wings. Others have four, which are paired. Some wings are clear and others are colored. Some are as fragile as dried leaves and some are as hard as wood. Insects use their wings for flying, and as a visual display or a signal to other insects.

## Abdomen

The **abdomen** contains the digestive tract. In most orders of insects, the abdomen contains eleven segments. Unlike other arthropods (including insects, crustaceans, spiders, scorpions, and centipedes), adult insects have no legs on the abdomen. Some larval, or immature, insects have appendages, referred to as pseudo-legs, or prolegs, on their final abdominal segment. These allow them to grip plants and sticks as they move.

Insects have no lungs. Adult insects breathe through spiracles, which are special openings in the side of the abdomen. Air enters the spiracles into the body through a series of smaller, branching pipes called tracheae. Many aquatic insect larvae have gills that work much like the gills of a fish to collect oxygen from the water. The adult forms of aquatic insects that spend their lives underwater, such as water beetles, don't have gills, and must go to the surface to capture an air bubble before diving underwater to search for food.

## Life Cycles

Insects develop from egg to adult during the various stages of their life cycle. A fish may be attracted to a particular species of insect at a certain stage of its life cycle, or at a particular time of year. One of the challenges of fly fishing is to select the right fly (resembling the correct life stage) and knowing what interests the fish. This is why it's

important to know about the developmental stages of insects when you're fly fishing.

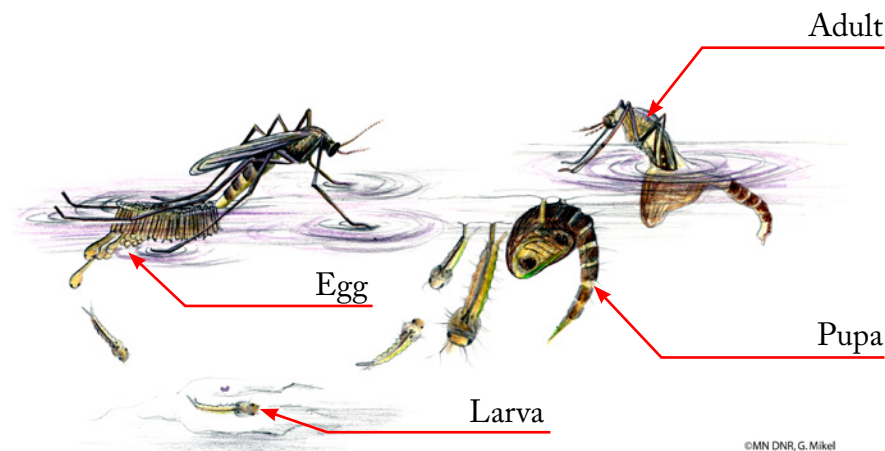
### Molting

When an insect hatches from the egg it can usually survive on its own, but it is small, wingless, and sexually immature. Its primary purpose is to eat and grow. If it survives, it will periodically outgrow, shed, and replace its exoskeleton during a process called **molting**. As the insect grows larger, other physical changes occur inside the exoskeleton—wings grow, for example. When the exoskeleton becomes too tight, a release of hormones triggers molting. In some insect species, the number of molts is constant, but in other species the number of molts varies in response to temperature, food availability, or other environmental factors. When an insect reaches the adult stage, growing stops and it no longer molts.

### Metamorphosis

Insects go through dramatic changes in the shape and function of their body parts as they mature. When an insect hatches from its egg, it follows one of two pathways of development. Each pathway is referred to as a metamorphosis. **Metamorphosis** in insects can be defined as the changes in form and lifestyle occurring during stages of development that lead to maturity.

Insects develop through either complete or incomplete metamorphosis. **Complete metamorphosis** has four stages: egg, larva, pupa, and adult. Complete metamorphosis is most commonly illustrated by the familiar changes that occur during the life cycle of a butterfly, which develops from egg to larva (caterpillar) to pupa (cocoon) to adult. The larval and pupal stages are quite different in form from the adult stage. Some aquatic insects, such as caddisflies and mosquitoes, undergo complete metamorphosis.



**During the process of complete metamorphosis, the mosquito matures from egg to larva to pupa to adult.**



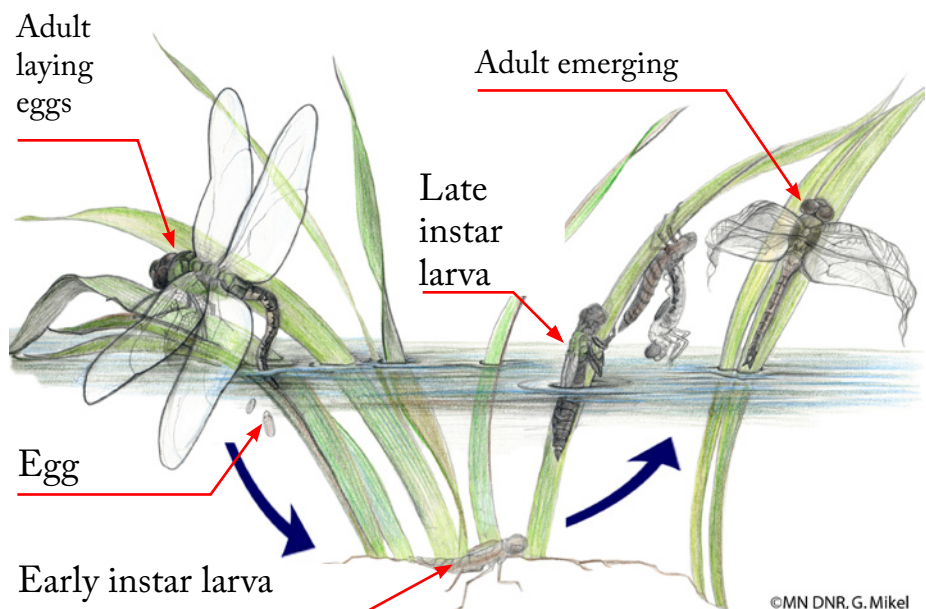
## Larva or Nymph?

Technically, **larva** is the term that describes the juvenile stage of insects that develop through complete metamorphosis. **Nymph** is a term often used (rather than larva) when the juvenile insect more closely resembles the adult stage of insects that develop through incomplete metamorphosis. In fly fishing literature, however, you may see the terms larva and nymph used interchangeably.

## Duns and Spinners

The metamorphosis of mayflies includes two adult stages. A dun is a sub-adult newly emerged from its juvenile stage. Because their wings lack blood, duns are often pale-colored. The dun molts into a spinner, or adult. Adults mate, return to the water to lay eggs, and die.

**Incomplete metamorphosis** is simpler and has three stages: egg, larva, and adult. With incomplete metamorphosis, the organism looks like a mini-adult when it hatches from its egg, and is called an **early instar larva**. As the larva grows larger, it more closely resembles the adult form of the insect, and is referred to as a **late instar larva**. Dragonflies are aquatic insects that develop by incomplete metamorphosis. They spend most of their lives as aquatic early and late instar larvae. When a dragonfly larva reaches maturity, it leaves the water, crawls out on a plant or tree trunk, and molts its exoskeleton for the last time. Its wings, which have grown slowly, unfurl and fill with blood. When the wings harden, the dragonfly flies away for the remainder of its relatively short adulthood.



**During the process of incomplete metamorphosis, the dragonfly matures from egg to larva to adult.**

Complete Metamorphosis	Incomplete Metamorphosis
Mosquito	Stonefly
Caddisfly	Mayfly
Black fly	Damselfly
Crane fly	Water boatman
Midge	Backswimmer

## Fish Eat Aquatic Insects

All fish eat invertebrates, particularly aquatic insects, during some part of their lives. This stands to reason because the young fish have small mouths and can't eat larger prey. An early diet of crustaceans and insects helps small fish gain valuable nutrients that allow them to grow quickly. Rapid growth is an important survival mechanism because larger fish are less likely to be eaten by other fish. Some fish, such as trout, sunfish, and minnows, will feed on invertebrates their entire



lives. Others, such as northern pike, walleye, and bass, switch to a diet consisting primarily of smaller fish.

### Fishing Flies Resemble and Mimic the Motions of Aquatic Insects

Flies are categorized according to the types of fish foods they're intended to imitate: aquatic insects, terrestrial insects, crustaceans, frogs, eggs, and baitfish. The following flies resemble aquatic insects.

#### Dry Flies

A **dry fly** imitates an insect that has just emerged from the water in its transformation to an adult. It may also be an adult that has landed on the water to lay its eggs. These flies are made of lightweight, buoyant materials that don't readily absorb water, which is why they're described as "dry."

#### Wet Flies

Injured, struggling, or swimming insects attract fish because of their movement in the water. A **wet fly** is made from materials that absorb water. This allows them to sink below the water's surface. Examples of wet flies are an emerging larva, a diving adult, or a drowning adult that has finished laying its eggs. Often, wet flies don't resemble a particular insect species.

#### Nymph Patterns

Aquatic insects spend all or most of their life in the water. Typically, their entire immature life is spent underwater. Nymph patterns are created to resemble the larval forms of aquatic insects, particularly mayflies, stoneflies, and caddisflies. They're made of materials that absorb water, so they sink.

#### Tying Flies

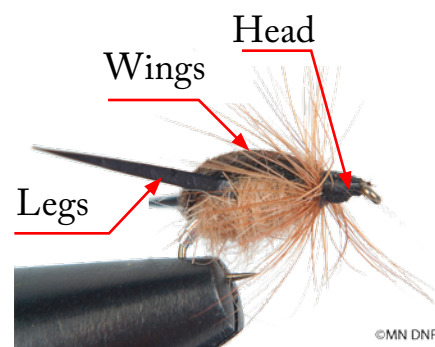
Tying flies is a hobby for those who fly fish. Fly anglers like to have the flexibility to match their flies to the insects abundant in a stream at any given time. Based on stream experiences, anglers create flies that mimic insects and other invertebrates.

Fly tyers use special tools on their workbench. Basic tools include a vise to hold the hook, bobbins to hold the thread, and small scissors. Fly tyers use natural and synthetic materials for tying flies. Some materials include feathers, fur, wire, thread, tinsel, foam, and glue.

There are many good books and manuals with instructions and step-by-step pattern details for tying flies. Local sport fish groups or bait shops also offer fly tying courses.



**Dry flies float, mimicking sub-adult and adult aquatic insects.**



**Wet flies sink. They don't necessarily imitate an organism.**



**Nymphs sink. They imitate immature forms of underwater aquatic insects.**



A hatch occurs when a large number of insects of an aquatic species emerge from juvenile to adult stage. Fly anglers choose flies resembling the species that is hatching. Hence the expression "Match the hatch."



If you're concerned about students sticking themselves with the sharp hooks, cover them with masking tape.

## Procedure

### Preparation

- 1 Copy one **Aquatic Insect Life Cycles Sheet** for each student.
- 2 Copy one **Parts of an Insect Sheet** for each student.
- 3 Copy one **Fly Types Sheet** for each student.
- 4 Copy and cut two sets of **Go Fly Fish Cards** for each group of four or five students. You may wish to copy these on cardstock and laminate them for durability.

## Activity

### Warm-up

- 1 Ask your students if they've ever heard of a type of artificial fishing lure that's very small, lightweight, and resembles an insect. This type of lure is used to catch fish with a fly rod. (The special lures are called **flies**.)
- 2 Although there are many types of flies, tell students that they're going to look at some flies that resemble aquatic insects.

### Lesson

- 1 To fool a fish, the fly must look like—and imitate the motion of—an aquatic insect. It must have the same parts as the insect. Pass out the **Parts of an Insect Sheet** and, as a class, label the parts.
- 2 Every adult aquatic insect has a head, thorax, abdomen, antennae, compound eyes, wings, and six legs. Some also have tails. Juvenile insects may have all of these parts, except wings, or they may look quite different from the adults. A fly can imitate an adult aquatic insect or a juvenile form. The juvenile form spends its time in the water and is called a larva or nymph. It doesn't have wings. The adult form has wings and it sits on the water's surface, or flies above it.
- 3 Ask your students if they know the word for what happens when an insect's body changes from its juvenile stage to its adult stage. Explaining that caterpillars go through this same sort of change when they turn into butterflies may prompt them to come up with the word. (This process of extreme change is called metamorphosis.)
- 4 Pass out the **Aquatic Insect Life Cycles Sheet**. Review the definition of life cycle. Discuss the two basic types of metamorphosis and label the sheets as you go.
- 5 Pass out the **Fly Types Sheet** so students can see the examples. Flies have their own special names. Flies that imitate a juvenile or larval form of an aquatic insect are called nymphs. Flies that resemble adult aquatic insects are usually called dry flies. There are also flies that imitate drowned adults and struggling immature insects—these are called wet flies. If you have some examples of flies to show the class, pass them around the class.

- 6 Tell the students that they're going to play a game of **Go Fly Fish** with a set of aquatic insect and fly cards. Form groups of four or five students and give each group two sets of cards (there should be a total of 28 pairs, or 54 cards, in each deck.) Have each group appoint a dealer. Have the dealer shuffle the deck and pass out five cards to each student, placing the rest of the cards face down in the center of the student group.
- 7 To begin, each student places any two matching cards from their hand face up on the table in front of them. (Match the artificial fly to the corresponding insect that it mimics.) The student to the left of the dealer then asks another student if she has any of one type of card. If that student does have that type, they must give it up. The first player puts down their new match and takes another turn. If the other student does not have the card, they can say, "Go fly fish!" The first player then draws a card from the deck. Then the player to the left of the first player takes a turn. The game continues until one student has no cards left in their hand. The player with the most pairs at that time wins.

### Wrap-up

Ask the students what they looked at on the cards to make a match. Was it the name written on the cards? Was it the body parts on the pictures? Let the students know that some fish are very picky about what they eat and will only bite on a fly that looks like the aquatic insects that are in and around the water at that time. The fish looks at color, size, body parts (shape and silhouette), and movement through the water to determine if the insect or fly resembles a natural food that it wants to eat.

### Assessment Options

- 1 Collect the student worksheets and observe participation in the game.
- 2 Assessment options include the Checklist and Rubric on the following pages.

Checklists are tools for students and instructors. Checklists involve students in managing their own learning. They help students understand and set learning goals before the lesson begins, and help them monitor their progress during the lesson, ensuring that they meet learning goals and objectives by the end of the lesson. Students can also use checklists to discover areas that may need improvement. Checklists help instructors monitor each student's progress throughout the lesson, facilitating appropriate adjustment of instruction to ensure learning by the end of the lesson. The instructor may wish to have students add several of their own learning goals to the checklist to personalize it, and to accommodate varied learning needs and styles.

### Grade

#### 23-24 points = A

Excellent. Work is above expectations.

#### 20-22 points = B

Good. Work meets expectations.

#### 16-19 points = C

Work is generally good. Some areas are better developed than others.

#### 12-15 points = D

Work does not meet expectations; it's not clear that student understands objectives.

#### 0-11 points = F

Work is unacceptable.

## Fool Fish With Flies Checklist

Possible Points	Points Earned	Points Earned	
	Student	Instructor	
4	_____	_____	Student identifies and correctly labels all six insect parts on the <b>Parts of an Insect Sheet</b> .
4	_____	_____	Student correctly labels all stages of metamorphosis on the <b>Parts of an Insect Sheet</b> .
3	_____	_____	Student accurately labels three flies on the <b>Aquatic Insect Life Cycles Sheet</b> .
3	_____	_____	Student identifies each of the three flies on the <b>Aquatic Insect Life Cycles Sheet</b> , and describes why they attract fish.
3	_____	_____	Student accurately labels three flies on the <b>Fly Types Sheet</b> .
3	_____	_____	Student describes why the three types of flies on the <b>Fly Types Sheet</b> attract fish.
4	_____	_____	Worksheets are neat and easy to read.
<b>Total Points</b>			
<b>24</b>	_____	_____	<b>Score</b> _____

# *Fool Fish With Flies Scoring Rubric*

Worksheet Criteria	4 Excellent	3 Good	2 Fair	1 Poor	0 Unacceptable
<b>Parts of an Insect Sheet</b>	Can identify and correctly label all six insect parts.	Can identify and correctly label five of the insect parts.	Can identify and label four of the insect parts.	Can identify and label less than four of the insect parts.	Can't identify insect parts.
<b>Life Cycle Sheet</b>	All stages of metamorphosis correctly labeled.	Six stages of metamorphosis correctly labeled.	Four or five stages of metamorphosis correctly labeled.	Less than three stages of metamorphosis correctly labeled.	No stages of metamorphosis correctly labeled.
<b>Fly Types Sheet</b>	Three flies accurately labeled. Describes one specific reason why each of them attracts fish.	Two flies accurately labeled. Describes why fish are attracted to artificial flies in general.	One fly accurately labeled, but can't describe why it would attract a fish.	Labels no flies accurately.	Doesn't label flies.
<b>Legibility</b>	Worksheets are legible.	Worksheets show two or three marks or stains but are legible.	Worksheets barely legible, with numerous marks or stains.	Worksheets messy and illegible.	Doesn't complete worksheet.

Score \_\_\_\_\_ (Calculate score by dividing total points by number of criteria.)

## Diving Deeper

### Extensions

- 1 Ask a fly tyer (such as a parent who fly fishes, a member of a local fly fishing group, or someone from a local fly shop) to visit your class to demonstrate fly tying. Ask them to discuss the materials they use, the kinds of insect their flies imitate, and the types of fish they attract.
- 2 Bring some aquatic invertebrates to the classroom for observation and identification. Watch for signs of molting and metamorphosis.
- 3 Do Lesson 1:4—**Water Habitat Site Study**. Have the students identify the aquatic invertebrates they collect.
- 4 Modify Lesson 5:5—**Flashy Fish Catchers** by having students use the **Go Fly Fish Cards** to create a series of flies resembling aquatic insects at various life stages.

## For the Small Fry

### K-2 Option

- 1 Create a puppet show to demonstrate metamorphosis.
- 2 Place felt cut-outs illustrating the stages of an insect's life cycle on a felt board as you discuss metamorphosis with the students.
- 3 Have students collect caterpillars and keep them in jars to watch them as they make cocoons.
- 4 Collect dragonfly larvae from a nearby pond and bring them to class for students to observe. Compare the dragonfly larvae to illustrations of adult dragonflies. Note similarities and differences.
- 5 Create the **Go Fly Fish Cards** and use them for a matching game and a game of Go Fish.



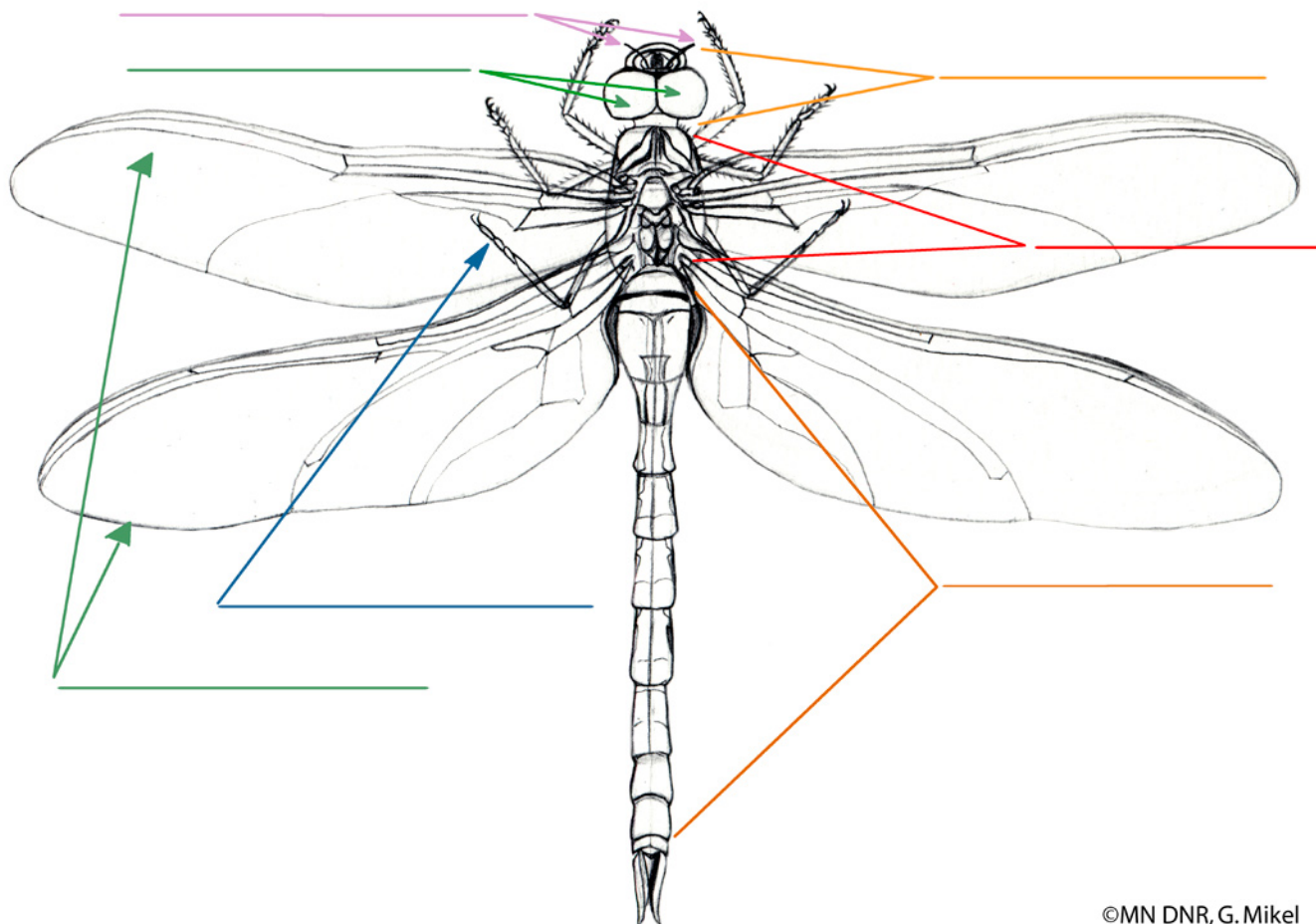
**STUDENT COPY**

Name \_\_\_\_\_ Date \_\_\_\_\_

*Parts of an Insect Sheet*

Use these words to label the parts of this adult insect. Then color the dragonfly.

Head  
Eyes  
Abdomen  
Antennae  
Thorax  
Wings  
Legs



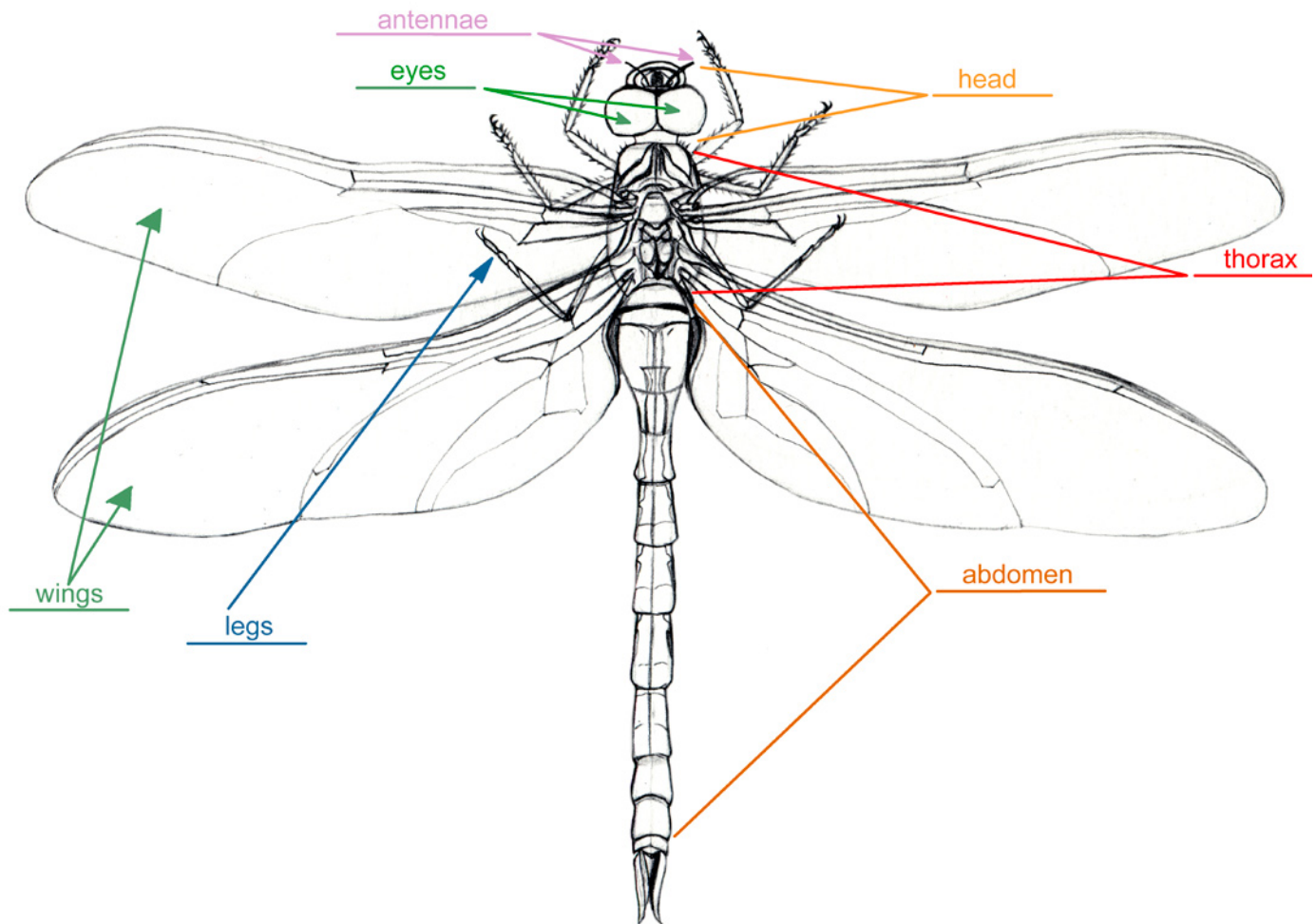
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**INSTRUCTOR COPY***Parts of an Insect Answer Sheet*

Use these words to label the parts of this adult insect. Then color the dragonfly.

Head  
Eyes  
Abdomen  
Antennae  
Thorax  
Wings  
Legs



©MN DNR, G. Mikel

STUDENT COPY
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Name \_\_\_\_\_ Date \_\_\_\_\_

### Aquatic Insect Life Cycles Sheet

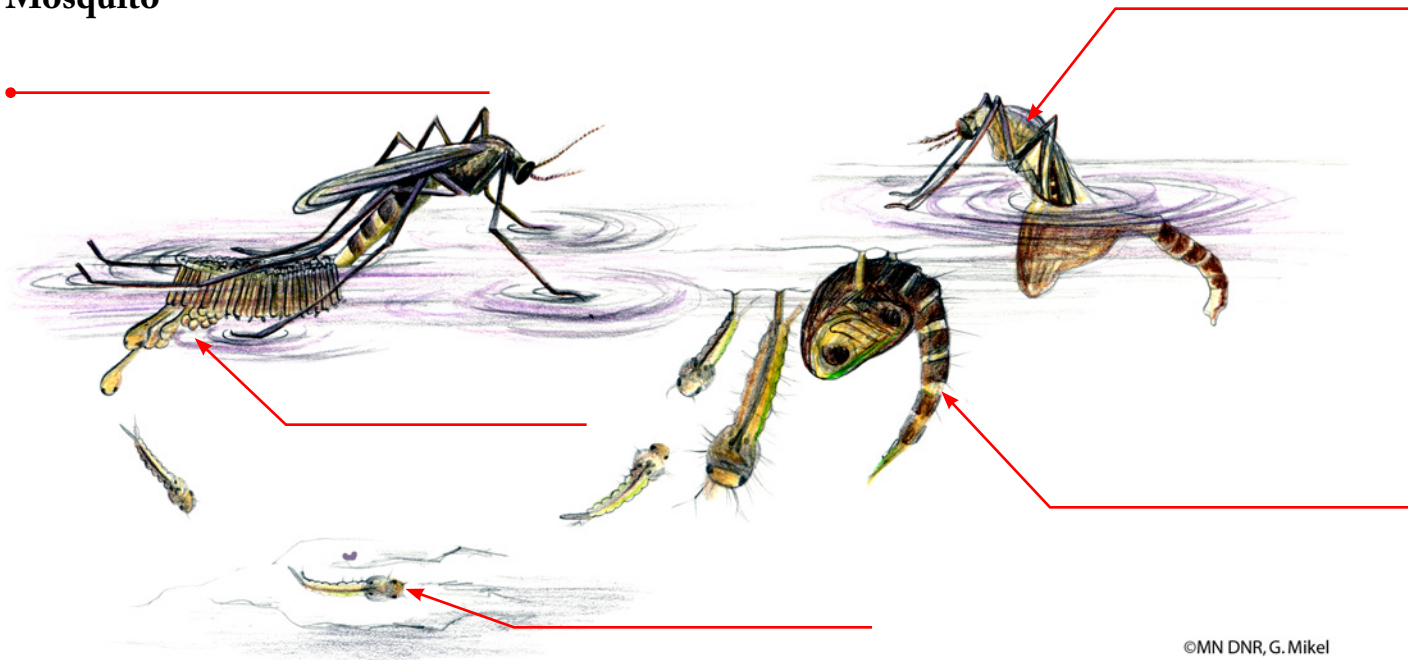
Use these words to label the stages of metamorphosis.  
Some of the words may be used more than once.

Larva  
Adult

Pupa  
Egg

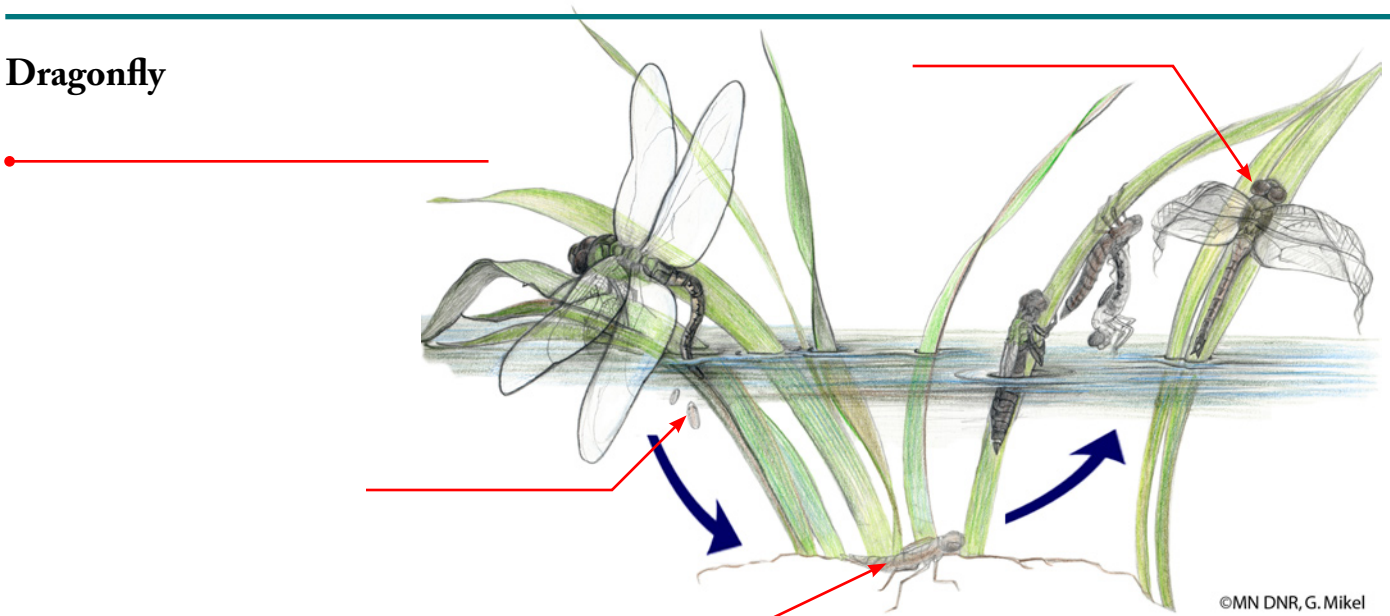
Incomplete metamorphosis  
Complete metamorphosis

#### Mosquito



©MN DNR, G. Mikel

#### Dragonfly



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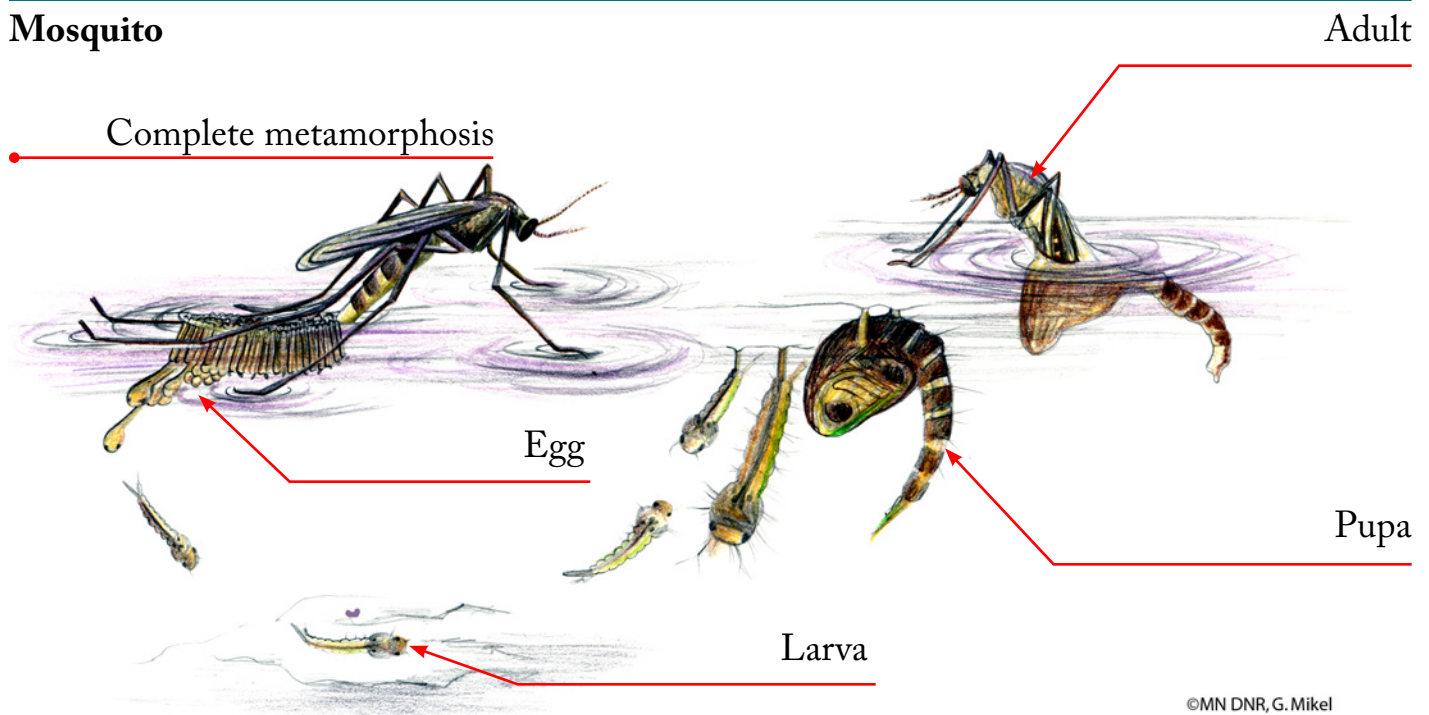
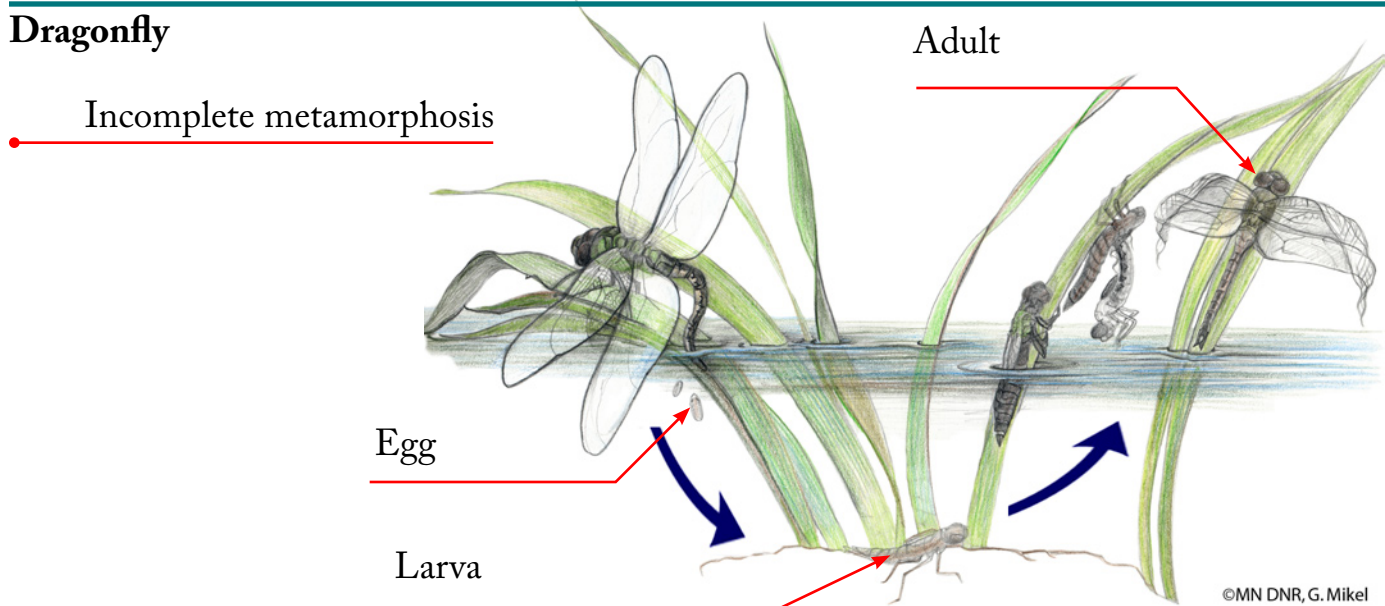
**INSTRUCTOR COPY***Aquatic Insect Life Cycles Answers Sheet*

Use these words to label the stages of metamorphosis.  
Some of the words may be used more than once.

Larva  
Adult

Pupa  
Egg

Incomplete metamorphosis  
Complete metamorphosis

**Mosquito****Dragonfly**

STUDENT COPY
--------------

Name \_\_\_\_\_ Date \_\_\_\_\_




*Fly Types Sheet*

1. Use these names to label the flies. Each fly name may be used just once.

Dry fly

Wet fly

Nymph pattern

<p>Fly A</p>  <p>©MN DNR</p> <hr/> <p>Name of Fly A</p>	<p>Fly B</p>  <p>©MN DNR</p> <hr/> <p>Name of Fly B</p>	<p>Fly C</p>  <p>©MN DNR</p> <hr/> <p>Name of Fly C</p>
---	--	---

2. Give one reason that a fish would be attracted to each fly.

Fly A \_\_\_\_\_

\_\_\_\_\_

Fly B \_\_\_\_\_

\_\_\_\_\_

Fly C \_\_\_\_\_

\_\_\_\_\_






**INSTRUCTOR COPY***Fly Types Answer Sheet*

1. Use these names to label the flies. Each fly name may be used just once.

Dry fly

Wet fly

Nymph pattern

<p>Fly A</p>  <p>Dry fly</p> <hr/> <p>Name of Fly A</p>	<p>Fly B</p>  <p>Nymph pattern</p> <hr/> <p>Name of Fly B</p>	<p>Fly C</p>  <p>Wet fly</p> <hr/> <p>Name of Fly C</p>
---	---	---

2. Give one reason that a fish would be attracted to each fly.

Fly A Dry flies float and mimic adult and sub-adult aquatic insects.

Fly B Nymph patterns sink and represent forms of underwater aquatic insects.

Fly C Wet flies sink and resemble swimming or drowning adult insects or larvae struggling to reach the surface.

## Go Fly Fish Cards

Copy these and cut them out.



**Adult Alderfly  
Dry Fly**



**Adult Caddisfly  
Dry Fly**



**Adult Crane fly  
Dry Fly**



**Adult Dragonfly  
Dry Fly**



**Mayfly Larva  
Nymph Pattern**



**Damselfly Larva  
Nymph Pattern**

## Go Fly Fish Cards

Copy these and cut them out.



**Caddisfly Larva  
Nymph Pattern**



**Stonefly Adult  
Dry Fly**



**Water Boatman (adult and larva look alike)  
Wet Fly**



**Stonefly Larva  
Nymph Pattern**



**Midge Larva  
Nymph Pattern**



**Hellgrammite (Dobsonfly) Larva  
Nymph Pattern**



## Go Fly Fish Cards

Copy these and cut them out.



©MN DNR

**Backswimmer Adult  
Wet Fly**



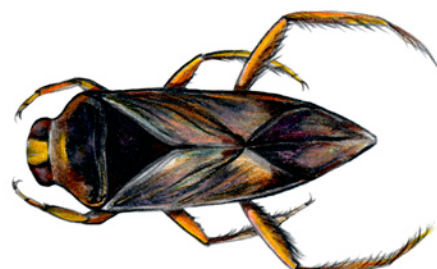
©MN DNR

**Mayfly Adult  
Dry Fly**



©MN DNR, G. Mikel

**Alderfly  
Adult**



©MN DNR, G. Mikel

**Backswimmer  
Adult**



©MN DNR, G. Mikel

**Caddisfly  
Adult**



©MN DNR, G. Mikel

**Caddisfly  
Larva**

## Go Fly Fish Cards

Copy these and cut them out.



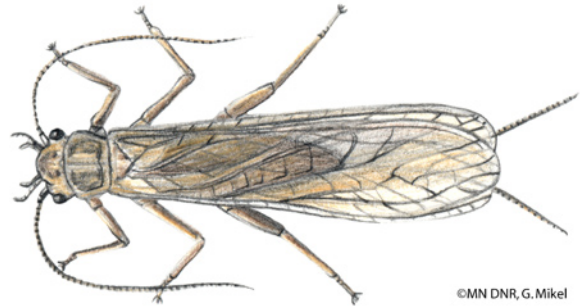
**Cranefly  
Adult**



**Damselfly  
Larva**



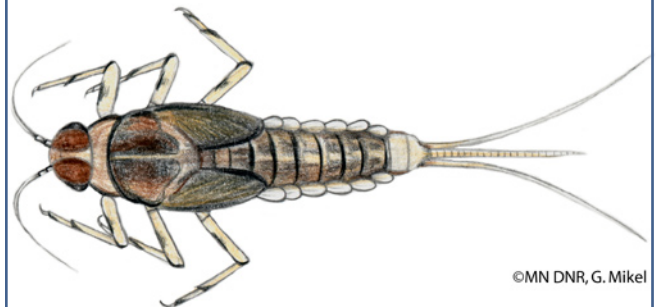
**Dragonfly  
Adult**



**Stonefly  
Adult**



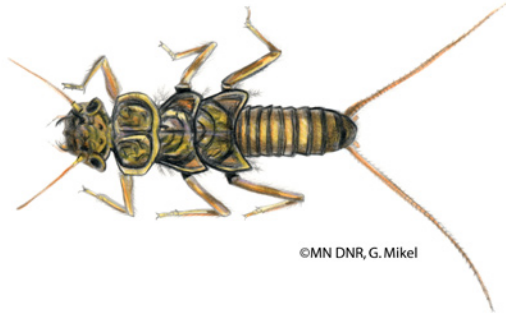
**Mayfly  
Adult**



**Mayfly  
Larva**

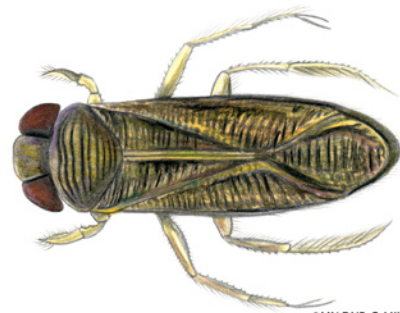
## Go Fly Fish Cards

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**Stonefly  
Larva**



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**Water Boatman  
Adult**



©MN DNR, G. Mikel

**Midge  
Larva**



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**Hellgrammite (Dobsonfly)  
Larva**