LESSON 11

app.rb

```
expect(grade(95))
  .to eq("A")
```

Ruby

Tests & Meta

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RUBY PROGRAMMING

LESSON 11

Testing and Metaprogramming

Minitest, RSpec, test doubles, and define_method, method_missing and send

Minitest

test/student_test.rb

```ruby
require "minitest/autorun"
require_relative "../lib/student"

class StudentTest < Minitest::Test
  def test_grade_a
    assert_equal "A", Student.new("Mariam", 95).grade
  end
  def test_rejects_bad_score
    assert_raises(ArgumentError) { Student.new("X", 120) }
  end
end
```

- Minitest ships with Ruby. A test class inherits from Minitest colon colon Test, and each …
- assert_equal checks a value, and assert_raises checks that an error happens.

01

RSpec

spec/student_spec.rb

```ruby
RSpec.describe Student do
  it "gives an A for 95" do
    expect(Student.new("Mariam", 95).grade).to eq("A")
  end

  it "rejects scores above 100" do
    expect { Student.new("X", 120) }.to raise_error(ArgumentError)
  end
end
```

- RSpec is the other popular choice. Tests read like specifications: describe a thing, say …
- Run with the rspec command, and it prints a readable list of behaviors.

02

Test Doubles

spec/converter_spec.rb

```ruby
it "converts using the current rate" do
  rates = double("RateService", rate_for: 70.0)
  converter = Converter.new(rates)
  expect(converter.to_afn(10)).to eq(700.0)
end
```

- When code calls a slow or external service, replace it in tests with a double, a fake …
- Your tests stay fast and do not depend on the network.

03

Metaprogramming: send and define_method

meta.rb

```ruby
class Report
  %w[daily weekly monthly].each do |period|
    define_method("#{period}_total") do
      "total for #{period}"
    end
  end
end
Report.new.weekly_total         # "total for weekly"
Report.new.send(:daily_total)   # "total for daily"
```

- Ruby can call and create methods at run time. send calls a method by name, and …
- This is how Rails gives you methods like find_by_email without anyone writing them.

04

method_missing

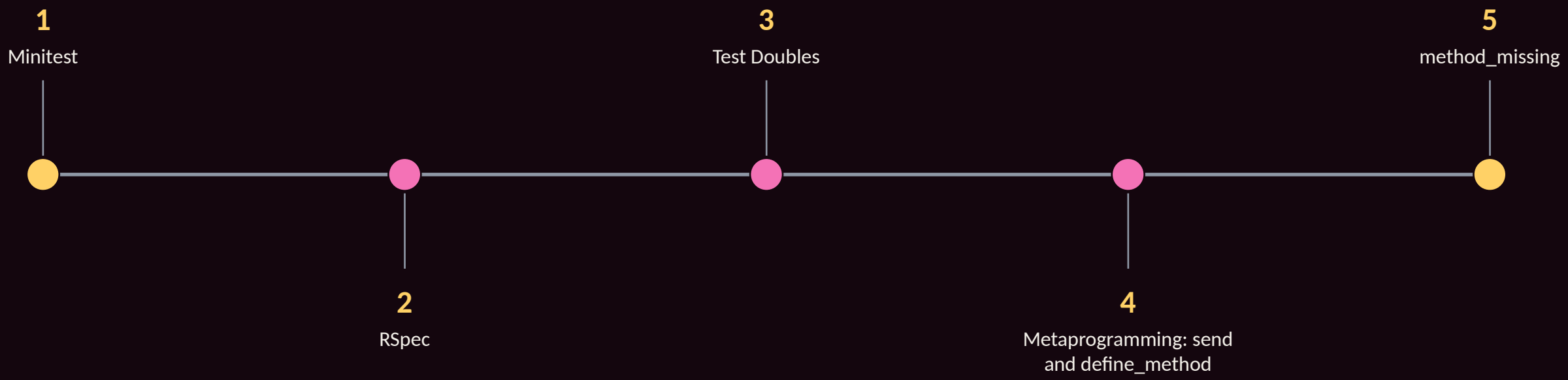
settings.rb

```ruby
class Settings
  def initialize(h) = @h = h
  def method_missing(name, *args)
    @h.key?(name) ? @h[name] : super
  end
  def respond_to_missing?(name, priv = false) = @h.key?(name) || super
end
s = Settings.new(city: "Kabul")
s.city            # "Kabul"
```

- When an object receives a method it does not have, Ruby calls method_missing. Override it …
- Always pair it with respond_to_missing?, and use this power sparingly, because it makes …

05

Lesson Map


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Test Doubles
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Metaprogramming: send and define_method
5
method_missing

Sources and Further Reading

test/student_test.rb

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```

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```

Thank you for watching

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